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NAUHEIM

ITS

REMEDIES, INDICATIONS AND RESULTS.

AFTER A PRACTISE OF
TWENTY-ONE YEARS AT THE WATERING-PLACE OF NAUHEIM

BY

WILHELM BODE (JUNIOR) **M. D.**
GROSSHERZOGLICH-HESSISCHER BADEARZT UND MEDICINALRATH.

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A New Bathing-Establishment.

In the spring of 1867, the first year of my professional career in the watering-place of Nauheim, a newly built establishment of large and solid construction was opened and given up to public use, as No. III of the bathing establishments. But the demand for baths had for some time so increased that the bathing accomodations of our three houses were not at all sufficient. Though fixed bathing hours were no longer kept and people were allowed to bathe in the afternoon, the attendants, though working to their utmost, especially in the height of the season, could not prevent people from waiting sometimes for hours for their baths. Many complaints caused by inconveniences such as the want of a sufficient number of baths naturally became known to foreign medical men. I am therefore pleased to tell them in the very beginning of this treatise, that a new fiscal bath will be opened in the beginning of this season as bathing-establishment No. IV.

Origin of the Kinds of Baths now in Use.

I particularly wish to emphasize that by means of this new establishment we can not only meet the want of accomodation but that we are now enabled to separate the different kinds of baths, which has long been recognized to be necessary for the interest of our patients and for simplifying the management.

While formerly by the name of brine-baths only natural warm-baths, containing C_2O_4*) in a low degree were given, it has now been found necessary to modify this rule. There had been persons who could not bear the slightest quantity of C_2O_4, and others for whom the stimulating power of the ordinary bath did not suffice so that in the course of time various forms of baths had to be introduced. By the construction of new water-pipes in the old bath-rooms the application of simple brine-baths, free from C_2O_4, as well as the so-called effervescent baths, containing a large amount of C_2O_4, was rendered possible. But as in the same rooms, besides these three kinds of baths, current and effervescent current baths were also applied, confusion could not be avoided. All these inconveniencies however have been entirely removed by the new arrangement.

Unfortunately the watering-place of Nauheim with regard to its indications is not duly recognized, a fact I have had ample opportunity to discover, because the means of treatment on which the indications depend are not sufficiently known. I shall therefore give in the following pages a short review of the management as it is going to be, after the fourth bathing-establishment has been opened and some other improvements have been introduced.

Means of Treatment.

A. Baths (to comp. map No. I).

1. The natural thermal brine- and steel-baths, containing a moderate quantity of C_2O_4, are applied in

*) C_2O_4 = Carbonic acid.

the establishments II and III. The two springs VII and XII situated between the 3 old houses and bubbling out in the open air are collected in separate cisterns. By that means the free C_2O_4 partly evaporates, but the temperature of 31,5° and 36,3° C. remains nearly unchanged when the brine is conducted into the baths. Amount of salt 2—3 percent. The thermal baths can be prepared either from one of the springs, or may be a mixture from both.

2. The simple brine-baths free from C_2O_4 (like those in Kreuznach etc.) are only applied in the new establishment IV at a distance of 300 meters from the springs. (The brine delivered during the night is conducted to the new graduation-house on one side of the bath IV and there during the passage loses completely the C_2O_4, and the chalk which are unnecessary to the bath. This strong pure brine passes after the graduation into a large reservoir and from there into the baths of the bathing-establishment. The brine is raised to a sufficient temperature by aid of boiling water and may be weakened (it contains 3 percent of salt) by the addition of fresh water or strengthened by adding our excellent lye*) rich with chloride of lime. Thus every degree of heat or strength may be obtained.

3. The so-called effervescent baths containing C_2O_4 in a high degree are only applied in the old bathing-establishment No. I near the springs. (The suckers of the springs VII and XII branch underground into two tubes, which passing the whole length of the house I and terminating in a so-called swansneck supply

*) Among a 1000 parts there are 418,4 solid parts (316,1 chloride of lime) and 581,6 water.

the baths in the eastern and western part of the house.*) So the brine passes directly from the earth into the bath without coming in contact with the atmosphere. The water of these baths is perfectly transparent, quite different from the water of the natural thermal baths, which is muddy with the deposits of the iron combinations. Also carbonic acid is so abundant in this pure transparent water, that it seems advisable to take such a bath only in a covered bath, as it may cause intoxication by inhaling the $C_2 O_4$.

4. Current baths are applied in the establishment II and III in baths specially constructed to the purpose. Whilst the patient is having his bath the cranes of the tubes at the bottom of the bath conveying the brine are left open, another opening at the top-end of the bath allowing the surplus of water to flow off. The force of water thus set free occasioned by the high pressure causes a motion like that of a whirl-pool. But the sensation exerted upon the skin is a comparatively slight one to that which is caused by the heightened effect of the $C_2 O_4$.

5. Effervescent current baths are only applied in the bathing establishment I (to comp. 3). (The effervescent bath has still a greater effect than the simple current bath, as the brine passing directly from the suckers into the baths delivers a large quantity of carbonic acid. In that way the Nauheim effervescent current bath

*) The arrangements for effervescent and current effervescent baths from spring XII are new, so that these kinds of baths will be applied for the first time this season. The possibility of a larger quantity of $C_2 O_4$ than that from spring VII and a raised temperature are also suggested.

out of the springs VII and XII surpass every other form of similar brine and steel-baths.)

As the indications are more fully treated further on, I only mention here the other means of remedy which are at our disposal.

B. Springs for drinking-purposes.

1. Kurbrunnen

(of 1000 gr. 18,5 solid component parts. Temp. 21,5° C. and 2,0 percent of free $C_2 O_4$).

2. Karlsbrunnen

(of 1000 gr. 12,5 solid component parts. Temp. 15° C. and 1,5 percent of free $C_2 O_4$).

3. Ludwigsbrunnen

(of 1000 gr. 1,05 solid component parts. Temp. 18,5° C. and 1,2 percent of free $C_2 O_4$).

No. 1 and 2 are salty drinking springs, No. 3 an alkaline chaly-beate spring.

The Kurbrunnen being exceedingly strong I mostly prescribe it mixed with Ludwigsbrunnen. The mixture already recommended in an essay on the Ludwigsbrunnen, published in 1868 by the author resembles the Ragoczy of Kissingen and represents a water mildly stimulating the peristaltic motion of the bowels. It is mostly taken before breakfast in doses of from 2—4 glasses. I always order this mixture, when I intend a diuretic treatment. Besides this mixture the Ludwigsbrunnen is also taken together with goatswhey or without it in large quantities during the whole day, if the kidneys are to be „washed" (gravel).

C. Other means of treatment.

A saloon for inhalation rebuilt five years ago in the lower pavilion of the drinking hall near the Kurbrunnen (cp. map II) and furnished with all the most modern improvements. A long stay in this room the air of which is impregnated with brine also local douches of brine or warmed Kurbrunnen applied to the throat, larynx and nose by means of a suitable apparatus are very beneficial.

Graduation houses. The old graduation houses of the Nauheim saltworks extending from east to west at the southern part of the town had always been in some degree employed for therapeutic purposes. Apart from this there has been erected together with the new bathing establishment No. IV, a new graduation-house (64 meters long) with a covered walk on both sides to a depth of 4 meters. Thus in spite of rain a longer stay in the graduation air rich with ozone has been rendered possible.

Establishment for whey and milk cure of Düring from Appenzell. Goats and cows are examined at the medical board; in fact the animals and their food are continually superintended.

Electric baths have been recently introduced into the bathing establishment IV. Here also are to be found the most modern improvements of all sorts, douches (shower and spray baths, circular and rising douches with cold and warm brine of every temperature — no doubt a most important improvement for the treatment of many forms of diseases observed here.

Massage and therapeutic gymnastics. Numerous well trained attendants for male and female patients are

at our disposal. Gymnastics of the heart are practised under my personal supervision.

„Terrainkur“ (treatment by walking up-hill) — as far as it aids the effect of our baths — is rendered possible by the steep situation of Nauheim (at the foot of the Johannisberg) and by the mountain itself. The usual posts with the remark: end of the 1st, 2nd etc. quarter of an hour are to be noticed in our town too. For a proper „Oertel-treatment“ Nauheim however is not suited on account of its otherwise flat environs.

Grape cure in the vineyard of Mr. Löffler near the Johannisberg. Patients are admitted to the vineyards and may have their grapes cut on the spot.

Cold baths in the large lake at the northern part of the park. Nauheim is also highly distinguished by its pure refreshing and stimulating air. The exquisite shady park and wood*), at a distance of a quarter of an hour only, render a stay in Nauheim especially healthy.

General Hints on the Indications.

In accordance with the enlargement and the increase of remedies the indications have changed considerably during my professional career of 21 years. Formerly the $C_2 O_4$ and its strong effect were not duly recognized. In the old books on Nauheim (F. Bode and Beneke) it is hardly mentioned. Nauheim was considered a brine watering place only, so the indications generally valid in such places were

*) In this respect the year 1888 also realises a long felt desire as a road has been constructed through the Nauheim orchard district; so the woods afford a shady promenade at the end of which a spacious restaurant has been erected.

also current in Nauheim. The valuable and exact inquiries of Beneke into the change of substance, influenced by a Nauheim treatment, only refer to scrofulosa, chronic rheumatism, uterin diseases etc. — but the diseases which at present are mostly treated (affections of the spinal marrow and heart's disease) used to be banished from Nauheim — yet our springs consist of the same chemical elements! The fact is, clinical experience based upon careful observation has multiplied the indications. The bathing method, formerly irrational and altogether too strong, has been accomodated to the new indications. Careful observation has also proved the beneficial effect of the thermal baths containing $C_2 O_4$ upon the action of the heart, the circulation of the blood and the respiration. The discoveries in connection with the already well known effects of the thermal baths on the skin, on diurese etc. render Nauheim one of the most important watering places not only on account of its brine baths containing $C_2 O_4$ but also for its steel baths; the agencies of which — appropriately used — are highly beneficial factors and promise recovery even in cases of apparent hopeless chronic diseases.

Some happy results in cases of chronic diseases of the heart and of the spinal marrow have rendered Nauheim famous. As also the literature of the last ten years exclusively treats these affections, it seems as if Nauheim was meant to become a specific for these two forms, at the expence of other indications. Considering however the excellent results obtained in those other affections, since the existence of the bath, I desire to protest against such a proceeding.

The assertion that statistics in the medical line are rather doubtful is certainly true and particularly quoad

„results". — The effect of a cure is surely not to be judged on the day when the last bath is taken, though it is said that physicians in watering places put forward an after-effect of the cure, in order to keep the patient in good spirits. Such an after-effect however really exists, and we are fully entitled to depend on it; though unfortunately we seldom hear of it.

The number of patients who return next year or later is very small, so that the statistical material for a careful examination is comparatively small. My long professional career, however, has afforded good rows of numbers, which — as they are very interesting — I intend to publish. These nosological tables confirm my above-mentioned anxiety that the Nauheim baths are considered effective with a few specific diseases only. While twenty years ago cases of scrofulosa used to take up one quarter of my books, they have become very rare now. Chronic metritis, parametritis especially the gynological cases are equally decreasing. Although many of my colleagues, who used to send these patients to Nauheim have died, the decrease proves that their successors do not think of Nauheim, because they know it only as being effective for diseases of the heart and of the spinal marrow. The number of chronic heart diseases has however rapidly increased, since Beneke (1872) has pointed out the importance of Nauheim in recent processes of exsudations, acquired in articular rheumatism. Last summer I had under my care 307 patients suffering from heart's disease — and though this year the total number of our patients has risen from 5500 to 7000 the above-mentioned number of affections of the heart must be called quite enormous — especially if one considers that six more physicians live here, and that they

too can probably state an equal increase of cases of heart's disease.

My tables also show a considerable increase of the chronic affections of the spinal marrow and its skins, especially since I have taken the opportunity of drawing the attention of Prof. Erb upon the results of Nauheim with this kind of diseases. Erb who sends a great number of his patients to Nauheim every year has often spoken in high therms of the effect of our baths and it is to his authority that the increasing number of patients suffering from affections of the spinal marrow has to be attributed to.

After this rather prolonged digression I have now to enumerate and to explain the indications. In doing so I wish it to be understood that I am well aware of my not being able to tell anything new. All I can do is to collect long known facts and to explain them by help of my own clinical experiences founded on careful observation.

INDICATIONS.

I. Diseases of the Heart.

1. Diseases of the heart, namely recent endocarditis, idiopathic and especially secondary, caused by articular rheumatism or other affections.

Residues of a previous endocarditis, especially layers placed upon the mitral valve, decrease and, as I have often observed, completely disappear under the influence of a

Nauheim treatment. I therefore venture to propose: The sooner after endocarditis (mostly caused by articular rheumatism, a Nauheim treatment is used, the greater is the hope to remove the endocarditical exsudation and thus to prevent the beginning of a real insufficience or stenosis of the valve. I have even treated with the best success patients whose endocarditical process had not yet been completely overcome, as slight risings of temperature proved, or such who during the treatment suffered from rheumatic and endocarditic relapses. Such cases of course have to be most carefully attended to, as to the duration, temperature and strength of every single bath. All these particulars have to be settled from day to day. Provided all due precautions being taken no rising of the fever — as might be supposed a priori — nor any increase of the local affection by the bath is to be feared; on the contrary these quite recent cases offer the best chance of a complete recovery. It has been rare that complete recovery in cases of recent endocarditis localized on the mitral valve (or aorta) (diagnosis without any accidental noise) has been attained during the cure itself. The fact however that three recoveries really did occur is sufficient to give hope for the same good result in every new case. At the other hand, I very often have been able to state an improvement in that way, that a loud sharp noise fully muffling the heart-sound, had changed into a low and soft murmur belonging to the again distinctly audible heart-sound. Also a gradual improvement in the course of treatment repeated for several years has often occurred. Apart from the circumstances to which the effect of the baths with diseases of the heart mostly is due, the resorbent action of the bath is of great importance. The

thickening and the ensuing shrinking of the valves may as well be considered as an exsudation forming in the valve or upon it — but if, as experience proves, perametritic, pleuritic aud other exsudations are resorbed under the influence of our thermal baths within a few weeks, why should these same baths not be powerful enough to absorb as quickly a small exsudation bulking out the margin of a valve?! I have seen particularly happy results in children and young people, and two of the above mentioned recoveries belong to young people of the age of 14 and 16.

2. Chronic diseases of the heart and irregularity of circulation.

Though it may be possible in some cases to prevent the beginning of deficiency of the heart by Nauheim treatment, of course the removal of an old organic deficiency is not to be attained. I have to dwell all the more on this fact as, from silly advertisement in non-medical papers the expectations of many patients are very high. — Here only improvement can be expected — an improvement respecting the troubles of the heart and the prognosis quoad vitam. The exhaustion of the heart mostly causing the exitus lethalis is deferred.

The fact that patients with various deficiencies of the heart come here for the cure and that many of them are benefitted by it shows that there must be one certain moment common to them all and which is propitiously influenced by the treatment. The truth is Nauheim-baths are a tonic of first rank. They of course cannot cure anatomical changes of the insufficient and stenonized valve, but by increasing the power of the heart's contractions

they keep off engorgements for a longer time, than it is possible to do by internal application of other remedies known to us, and that is all what can be obtained in such cases. I have already pointed out that the effect of the bath is similar to that of digitalis. But whilst the stimulating power of digitalis does not last long, especially not if the medicine is taken frequently, the improvement proceeding from a Nauheim-treatment remains for months and sometimes even is permanent.

I have treated with the very best result many cases of muscular asthenia of the heart (the valves working normally) some caused by a fatty degeneration as well as others without this origin; also disorders of the valves where the compensation, until then satisfactory, did not suffice any longer and a beginning of dilatation not compensatory (steady dilatation of Stiller) was to be feared. Under the influence of the baths, carefully adapted to the state of the patient, the weak and therefore frequent contractions of the heart grow stronger and slower, the respiration becomes deeper; the secretion of $C_2 O_4$ through the lungs increases and produces a more complete oxidation of the blood, thus diminishing and removing the venous stasis which causes the alarming acute symptoms. Whether the effect is due to a direct stimulation of the cardiac ganglia, or whether the action is more central or whether the vaso-motory nerves are influenced or whether other agents are concerned, these are questions not yet answered and belonging to physiology. It is a matter of fact that our baths are an excellent tonic. In some cases I try to increase the effect of the baths by the aid of gymnastics of the heart, massage-cure or of a careful „Terrainkur". It is from the gymnastics of the

heart the so-called gymnastic of resistance that the best results may be expected. I often have obtained a decrease of 2—4 centimeters of the dulness of the heart. The decrease of dulness of a weakened and dilated heart by some centimeters caused by a tonic drug is well known. and Prof. Traube, as his pupils will remember, has shown how a decrease of heart-dulness after digitalis is promptly obtained. But whilst these momentary results are followed after some days or weeks by the status quo ante, the effect of Nauheim treatment, supported by massage and heart-gymnastics, are permanent. My opinion of the „Oertelkur" (Terrainkur combined with diminution of liquids) is not a favourable one. My own experience is rather limited, but I often had an opportunity of seeing and treating patients, who had gone through an „Oertelkur" a short time before and all I can say is, the consequences of this treatment fully justify my point of view.

The „Oertelkur" intends to facilitate the action of the heart by diminishing the quantity of blood in the ventricles and by stimulating the cordiac walls in order to increase the ventricular action.

With regard to the reduction of the supply of liquids which forms the dietetical part of the „Oertelkur", it remains to be proved whether the hydrous condition of the blood, really exists, whether the hydropic symptoms depend upon it, or whether they are only the consequence of a venous engorgement whilst the condition of the blood itself is healthy. I have always found an increase of the urinary secretions in people who are used to drink much as soon as their supply of liquids is reduced. Whether however from the decrease of the secretion, which immediately sets in as soon as the usual

abundance of liquids is again given, a real increase of blood is to be inferred, remains to be proved, for the excess may as well be secreted through the skin, the lungs etc. The usual effect of a dietetical „Oertelkur" is a decrease of weight and this is rather important with regard to the fatty degeneration of the heart. Theoretically this decrease of weight is supposed to be caused by the patients taking a smaller amount of liquids thus preventing those parts of the nourishment producing the fat of the tissues to be absorbed and compelling the organism to take the fat necessary to its labour from the body itself viz: from the heart too. This decrease of fat however, together with the „draining" of the tissues are not the only causes of this decrease of weight! A person used to drink with his meals will eat much less will even lose his appetite, if he is obliged to eat without drinking. Thus the decrease of weight is not so much due to the deprivation in the way of liquids enforced upon the patient but far more to his eating less altogether. A general debilitation is the consequence of this method, which is always injurious, even where hypertropic patients with a fatty degeneration of the heart are concerned. The „weakness of the heart" caused by hypertrophy in that organ is meant to be removed. By this experiment however the weakening of the whole body very often increases that of the heart, so that instead of the intended improvement quite the contrary effect is caused. I therefore always apply that kind of treatment only in those cases of hypertrophy, where the action of the heart is quite sufficient; but I advise every one to be very careful, wherever weakness of the heart has been diagnosticated, whether there are valvular disorders or not.

But leaving aside the hypertrophic patients the principal task in all cases of weakness of the heart, besides facilitating its action, is to promote the formation of new wholesome parts of tissue and for that purpose a good supply of healthy nourishment is indispensable. I therefore warn only against the excessive use of liquids, especially against the immoderate use of alcohol, which of course may weaken the heart. Until now no positive prove has been given that by the reduction of liquids no injury is done to the organism but that the relief of the heart is such as to promise a real and constant corroboration of this organ. As long as this has not been proved I always allow my patients to take the same amount of drink a person moderate in habits is accustomed to.

The second part of the „Oertelkur" strengthening the heart-muscle by gymnastics, I like better, but only so far as to always recommend gymnastics of the heart, though not in all cases exercise consisting in walking up-hill (Terrainkur). Gymnastics of the heart are based upon the principle: „a muscle which does not work gets weak and a muscle which does work gains strength." Admitting the correctness of this principle, it is not correct however to conclude that: „in cases of weakness of the heart this organ must be compelled to work" or: „as nearly in all cases of heart diseases, deficiency of the valves included, an increase of the action of the heart is highly important, this increased activity has only to be called forth by walking up-hill, in order to raise the strength of the heart." No such conclusions, will ever be drawn by medical men but it is done frequently by the non-professional; and as Oertel-treatment has sooner become the universal property of the whole laity than any other

method, the fact cannot be denied that much mischief has been created by it. Neither the inventor, nor the method itself are to be blamed for it but only the bad habit of discussing in daily papers all kinds of medical problems in order to render them popular, instead of confining these discussions to the professional papers. In the mean time it has already been proved that gymnastics of the heart, as far as climbing mountains is concerned, are dangerous for the majority of those suffering from heart diseases and decidedly injurious to many, if not carefully superintended by a physician. In deciding the question whether in cases of weakness of the heart gymnastics may be employed, one ought always to remember that a treatment beneficial for a muscle organically healthy but only weakened at the time need not be beneficial for a muscle really diseased.

But with almost all diseases of the heart where treatment by walking up-hill (Terrainkur) is to be applied the cardiac muscle is diseased — in these cases a conflict arises between the repose required for strengthening the muscle and the stimulation often verging into an excess of irritation. Some deaths occurring during or immediately after „Terrainkur" plainly show the great danger of such an excess of irritation. I advise „Terrainkur" with the following affections only: 1. when the heart is covered by layers of fat (in opposition to the fatty degeneration); 2. with insufficiencies of the mitral valve and the aorta, if still compensated, in order to maintain this compensation and 3. with a wanting compensation only when this wanting compensation begins to set in again.

Only then „Terrainkur" proves an excellent support to the bathing treatment and is particularly to be re-

commended for the after-treatment. In prescribing „Terrainkur", I as a rule proceed as follows: The heart is repeatedly and very carefully examined, the statement of the dulness and one single auscultation of the valves not being sufficient. The temperature has to be carefully compared for several days, for in case of even slight risings, if there is nothing particular to account for them, the utmost care must be taken, as any small degree of endo- myo- and pericarditis is to be considered a contra-indication. The patient must be taught how to walk and to breathe, he must be made to understand that it is of no consequence whatever to walk a certain distance with a gradual ascent but to walk it thus that no palpitation accompanied by quickened breathing or, as I often have seen, even cyanosis are caused. I therefore always make my patients begin by short walks and a slight ascent. Those who really stand in need of a proper Oertelkur, I invariably send to such places where they are sure to find a physician familiar with this method. For my part I prefer applying direct gymnastics of the heart since with them I am better able to control the increased action of the heart caused by them. As absolutely contraindicated I consider gymnastics with all atheromatous affections (especially with those of the coronary arteries) with cases of advanced fatty degeneration, with stenosis of the valves, with aneurism and infarctions.

I have considered it my duty to develop, as much as is possible to do in so short a pamphlet, my opinion on this question, as Nauheim is numbered amongst the places fit for „Terrainkuren". At all events our baths are sure to bring about, what is meant to be the task of gymnastics, namely to contribute to strengthen the heart.

I do not intend to record here the symptoms belonging to every form of chronic heart disease and to add to it a physiological hypothesis nor can I state here in what way the Nauheim baths influence these symptoms and in what way improvement is brought about. I restrict myself to state that there is scarcely one single form of heart disease which has not come under my treatment here and that the results have proved to be best with cases of mitral insufficiencies and those of the aorta, with cases of a fatty degeneration and weakness of the cardiac muscle caused by overwork. Satisfactory results have also been obtained in cases of irregularity of circulation caused by stenosis (combined with insufficience or not) with neurosis of the heart and angina pectoris. With cases of real idiopathic myocarditis combined with an extensive destruction of the muscular fibrils I have only been able to obtain a passing improvement of the general state of health. One very remarkable result I however have seen in a case of severe pulmonal stenosis. The little patient whose heart was considerably enlarged and who was suffering from universal cyanosis, deepening into black on the lips and nails, was submitted to treatment four times. At first he always had to keep in a recumbent position, after some time however he so far recovered as to be able to walk short distances. This result appears all the more satisfactory as the patient had the misfortune to get a severe attack of diptheria which he however got over in spite of the fever rising to 41° and lasting for five days.

From the following account may be seen that by the Nauheim treatment alone (without the help of other means, massage, gymnastics, Oertel-treatment etc.) an ex-

cellent result may be obtained with severe diseases of the heart. The mechanical way of treating chronic diseases of the heart has long ago become universal and to employ it a patient need not be sent to Nauheim. I only want to state here what may be obtained from our special remedies alone.

Mrs. N., sixty years of age, formerly a very stout lady, now very thin, is described as suffering badly from her nerves. For years already she has been suffering from shortness of breath; during the last months violent stenocardiac attacks followed. Patient lost consciousness, staggered and if not supported fell down. In consequence of these attacks which of late had become more and more frequent general debility and sleeplessness set in. Inability of walking and ascending steps on account of dyspnoea. On admission: pale complexion, cyanotic lips, dulness of the heart extending $2^1/_2$ cm to the right, apex-jerk normal but weak, corresponding to the mitral valve a feeble systolic noise. Liver very much enlarged. No albumen. During the attack the systolic noise, as I noticed thrice, changed into a loud scraping which, gradually decreasing, lasted for 15—20 minutes. Slight oedema on the feet and the ankles; pulse very weak, varying between 90 and 96, irregular, intermittent. Diagnosis: Insufficience of the cardiac muscle in consequence of a slowly increasing fatty degeneration, with a comparatively slight mitral insufficience and a beginning partial (stable?) dilatation. The stenocardiac attacks are caused by a sudden increase of the insufficience of the cardiac muscle thus producing dyspnoea. Patient had felt relieved by using digitalis, but as soon as the medecine was not taken any longer the attacks grew more frequent and larger doses had to be given in consequence. At the same time the patient during the last weeks before the journey had been trying to overcome the general debility by taking compounds of quinine and iron. Patient was so weak that she had to be taken about in a bath-chair, she even had to be wheeled into the bath-room. The first bath I made her take was a thermal bath from spring VII 26° R. After having been in it for about 2 minutes only, patient had a violent stenocardiac attack. I let her rest for one day and then ordered a simple brine bath free from C_2O_4 for her, advising her to take a small

glass of brandy before getting into the bath. This form of bath patient stood very well, feeling particularly well during the hours of rest after the bath. After having had 6 brine baths, the thermal baths were again tried. They now agreed very well with the patient and 27 of them were taken. In order to make the respiration more regular, patient had to go through regular exercises (breathing slowly and deeply in a sitting position 6—12 times successively several times a day). She also went for short walks in the garden and good care was taken of a healthy diet. Besides this nothing else was done to help the bathing treatment. The attacks became less frequent and subsided altogether after the third week. At the end of the treatment patient was able to walk for a quarter of an hour without feeling exhausted and without getting dyspnoea; her complexion, her appetite and the general state of her health were much better and so were her spirits. The noise on the mitral valve was no longer to be heard, only when patient had exerted herself too much, it could be heard again without however ever growing as loud as before. The dulness of the heart was nearly reduced to its normal state. Patient who had arrived at the beginning of May and who left Nauheim on June 30th spent the summer in the country. In September she came back for another 3 weeks and took some more baths. She felt well during the whole of the winter and taking up her old habits again, went into society a good deal. She came back to Nauheim next year „from gratitude" as she said, adding joyfully that on her way here she had ascended some high mountain without feeling any bad effect from it. She took some more baths and since that time has remained in good health, free from any attack as well as from dyspnoea. At the last examinatien no noise at the mitral valve was to be heard, the dulness of the heart had disappeared altogether, the heart-sounds were regular and as loud as could be expected at the age of the patient.

The second case is meant to illustrate the way in which irregularity of circulation caused by previous affections of the valves may be compensated by a cure in Nauheim.

Mr. N., aged 52 years, without any hereditary disease, had always been in good health. In 1872 he had a violent attack of

articular rheumatism, another equally violent attack in 1876 and another in 1878. In the interval he had 5 or 6 slight attacks of short duration and no very high fever. The first attack already showed some endocardiac complications and there remained an insufficience of the mitral valve which however was compensated in a comparatively short time as at Christmas he was free from cardiac troubles (the first attack having taken place in August.) In all the following attacks the heart was supposed to have been affected and since the last attack in 1878 the compensation seemed to have been no longer sufficient. Since then patient had been in the habit of taking digitalis. On admission in June 1880: a loud systolic noise on the whole heart, being loudest at the mitral valve; 2nd pulmonary sound stronger too; diameter of the heart much increased, by 4 centimeters in length and by 7 centimeters in breadth; liver very much enlarged especially on the left lobe; a loud rattle (chronic bronchitis) in the middle and lower lobe of both the lungs; urine without albumen (was said to have been frequent at several times) diminished quantity, rich in uratis and phosphatis; oedema at the lower limbs, increasing towards the evening so that boots had to be taken off; ascites; increase of bodily weight during the last two years 11 pounds; want of breath; pulse 96; want of sleep; bad appetite; constipation; face pale and bloated, turns red at every movement. Patient stayed here for 6 weeks and during that time took 33 thermal-baths (from spring VII, 20—25°R.) During the winter no regular treatment was applied, patient only took for 4 weeks a powder of 4 gr. Carbonate of Lithia in sodawater twice a day. Next summer, in 1881, patient again came to Nauheim. The notes put down in my book then read as follows: brilliant result of the first cure; healthy complexion; decrease of bodily weight 10 pounds; neither ascites nor oedema; general health quite satisfactory. The dulness of the heart indicates a very small increase of diameter in length and only about 3 centimeter in breadth. The systolic noise at the mitral valve still continues, the other sounds of the heart are however quite distinct; the liver is somewhat enlarged in the left lobe only; both the lungs are free from any rattling (rhonchii), urine clear, is secreted in larger quantity than before (no albumen). Want of breath is felt only after exertion, patient is able to walk, rather slowly of course, for about two hours; ascending stairs now is quite easy to him

too. The same treatment as in the year before was gone through, thermal baths being again applied. In 1882 patient did not come back; in 1883 however he made his appearance again after having had some time ago another attack of articular rheumatism, the residues of which were still visible in three fingers of his left hand and on the elbow. The heart this time had not been affected by the attack. The same state of health as before. Again thermal baths were prescribed. During the night brine-compresses à la Priessnitz were applied to the swollen joints. The cure which already began to show the best result had to be interrupted in the middle of the third week as patient had to return home on account of family affairs. It was not before 1886 that patient returned to Nauheim. His whole appearance at once showed that the irregularity of circulation had increased; he felt in very low spirits; there were oedema on both his ankles; the dulness of the heart had not changed much, but the sounds were extremely weak; apex-jerk almost imperceptible; contractions 68; pulse weak and but rarely intermittent; 2^{nd} pulmonary sound very loud, liver enlarged considerably. The slightest exertion such as stooping or walking up and down the hall; any attempt of forced respiration whilst sitting at once raised the contractions to a 100 and more. There had been no other rheumatic attack; the sudden relapse however could be dated back to a certain day in March, when patient after having gone through a great deal of mental excitement and after having taken rather more alcoholic drinks than usual, had walked a certain distance as he often before had done without feeling any bad effect from it. This time however being rather excited he perhaps walked faster than he was in the habit of doing, talking and gesticulating all the time. During the night he was suffering so badly from palpitation and want of breath as to prevent him from sleeping. Next day he took digitalis and the attack „passed away quickly." But the troublesome symptoms gradually reappeared; he felt exceedingly weak and very much disinclined for any kind of exertion and his spirits in consequence were very low. As I had warned him against a continued use of digitalis he again came to Nauheim. This time too the effect of the cure was excellent, owing mainly to the circumstance that, as the state of the patient's health soon improved by the thermal baths I made him take the current effer-

vescent baths. Never did the powerful effect of the carbonic acid as contained in the Nauheim waters strike me more forcibly than with this case, showing plainly that by progressing carefully even the highest degrees of C_2O_4 may be employed with good effect. Patient after having gone through 6 weeks treatment left Nauheim almost altogether recovered.

The 3rd case is meant to prove that also with all the so-called nervous diseases of the heart (neurosis of the heart) the Nauheim treatment may be highly beneficial.

Mr. N., 71 years old, of tall stature and great bodily strength had from favourable outward circumstances and from a very frugal way of living enjoyed good health during all his life and had been until recently a man remarkably vigorous for his age. The first symptom of his failing health which to those about him was especially striking was an uncommon excitability. Soon afterwards a strange restlessness came over him, he felt very much depressed and showed a sudden want of selfconfidence and a sensitiveness quite unusual in him. Patient began to cry at the slightest provocation and his irritability soon became such as to compel him to give up his profession. Some time after, other more distinct symptoms proved the disease to come from the heart. Whilst talking his breath often suddenly failed him in the middle of a sentence, when walking he suffered greatly from want of breath and in ascending and especially in descending the stairs he had very bad attacks of giddiness. Violent palpitation from which he suffered both by day and by night, in walking, sitting and lying at last induced the patient, as digitalis and morphia had brought him no relief, to try the baths in Nauheim. Patient told me with many tears about the above mentioned symptoms. On examination I found the dulness of the heart quite normal, also was there no noise. The action of the heart itself however was quickened to such a degree as I never before or since have been able to notice in any other case. I never counted less than 200 beatings in a minute. The heart-shock visibly and perceptively extended over the whole heart reminding me involuntarily of the backward and forward motion of a loom. The whole left part of the chest was in constant motion. Diagnosis: neurosis of the heart. It was evident from the rapid

action of the heart that the stopping apparatus did not work properly, but I was unable to say just then what caused the paralysis of the branch of vagus in question. I tried to raise the patients spirits as best I could but did not prescribe anything except thermal baths ot 25° R. in which he was to remain for 6 minutes only. Patient who at first was very much afraid of getting apoplexy in the bath, felt so well after having been in it for 2—3 minutes, that I afterwards had much trouble in making him see the necessity of the short duration of the baths. Increasing 1 minute at a time the bath was gradually made to last longer, up to a duration of 15 minutes. With each bath the feeling of euphoria increased both during the bath and for some hours after. Patient was again able to breathe deeply, the motion of the heart decreased by 20, sometimes even by 40 and more beatings a minute. Arythmia however remained and the action of the heart was still far too quick, 160—180 a minute. Yet the patient was altogether very much better, his irritability and his sensitiveness were gone, the well of his tears was dried up, he was free from giddiness, was able to speak as much as he liked, could take a walk daily, in short, quoting his own words „he again felt like a human being." All this being the result of 24 baths taken during somewhat less than 5 weeks! Riegel from Giessen had seen this case and when patient returned in the following year could again ascertain the excellent effect of the Nauheim baths. Last summer, three years after the last course of baths had been taken, I saw him again. He then looked very well and with his heart still beating 160 times a minute was leading quite a comfortable life.

Before closing the chapter on heart diseases I wish to refer briefly to the influence which according to my own experience the Nauheim baths have on Albuminuria.

It must be understood that those forms of albuminuria combined with heart disease and therefore caused by engorgement of the kidneys do not contraindicate Nauheim. On the contrary it is to be noticed in many cases that with the improvement of the heart diseases brought about by our treatment, the albuminuria proceeding from

insufficient compensation is also removed. The Nauheim baths have also proved highly beneficial in cases of the so-called interstitial Nephritis combined with hypertrophy of the heart. In treating these forms the most careful attention as to the temperature of the bath is needed. According to my experience cold baths are not beneficial. I as a rule prescribe the temperature of the bath to be 26° R., in some cases however where the temperature had been gradually increased to 27°—28° R. a beneficial effect of the bath on the albuminuria could be stated.

With cases of chronic nephritis (parenchymatous) accompanied by profuse albuminuria our baths appear to be less effective. With these cases I have often noticed an increase instead of a decrease of albumen to set in. I make it a rule in all cases of albuminuria to examine the urine daily, as soon as I notice that after the patient's having had 6—8 baths the albumen is increasing instead of decreasing, he is at once advised to leave off the treatment as by its continuation a sudden exitus lethalis might occur. With such cases the amount of the urine itself, its increase or decrease is also of great importance.

II. Chronic Affections of the Spinal Marrow, its Skins and of the Nerves.

The verdict of Beneke who in his book on Nauheim has declared its baths to be ineffective with those diseases has called forth the wellknown controversy between himself and Dr. Braun from Rehme. The same disease to the treatment of which Rehme owes its prosperity was considered as not being fit for treatment in Nauheim though the springs of both the watering places are alike with

regard to their chemical elements and the amount of carbonic acid they contain. The failure which Beneke experienced could not only be attributed to the roulette, then still existing in Nauheim, though the excitement caused by gambling is especially dangerous to that kind of disease. Now we know that at Nauheim the same good results may be obtained as in Rehme. If Beneke had not died so suddenly he certainly would have revoked his own words as he told me himself when he was last in Nauheim. Beneke had long before that time become convinced that his failure was due to the method then in use and in an essay on Nauheim (sold by the Kurverein 1877) he admitted its baths to be successful with „some forms of paralysis." Now-a-days patients suffering from chronic diseases of the spinal marrow and its skins, in fact all those complaining of „nerves" are in great number to be met with here. Without any previous agreement the same method has been employed by our physicians for many years. With many forms of the chronic diseases in question a course of baths is applied beginning with simple brine-baths and finishing with current-effervescent baths. I always advise patients who come to Nauheim for the first time to begin with simple brine-baths as with these affections an excess of excitement may be followed by serious inconveniences.

I have thought it best in discussing these diseases to separate the forms where resorption of exsudates, which by pressing upon the spinal marrow or upon the nerves, call forth paralytic symptoms as well as paralysis, from those forms which are caused by an affection of the spinal marrow or of the nervous substance itself. The former kind of disease from its very nature promises a better

prognosis as it requires the resorbent action of the baths which proves quite as successful with exsudation of the spinal marrow as with those of the endocardium and the pleura.

Though common to all forms yet nowhere as with these cases does the reflex-action of the bath show so distinctly. The irritation produced by the bath upon the peripheral nerve endings is transferred at once to the diseased organ. With cases of aenaemia, with a bad and insufficient nutrition of the cells combined with emptiness of the vessels a collateral filling of the vessels is brought about by the pressure of the blood and the badly-fed cells are revived. With cases of recent hyperaemiae however the beneficial effect of our baths which has been observed so often may be theoretically explained by the contraction of the vessels and the fluxion to the periphery by which a decrease of the internal temperature is caused. But as this contraction is always preceded by a dilatation of the vessels and as it is very difficult to judge beforehand the effect the baths are likely to have I as a rule am very careful in prescribing baths containing carbonic acid and I very much prefer prescribing the indifferent thermal baths of 28° R. by which the patients are much benefited, a fact which is also acknowledged by many of my colleagues. I wish it however to be understood that I refer to acute hyperaemiae only. If once it has become chronic as soon as destructive processes have begun to take place, as soon as the excess of sensibility has disappeared then the thermal baths containing carbonic acid have to be applied.

It may be said that my way to account for the effect of the baths upon the affections in question is only a

hypothesis which has yet to be confirmed by exact experiments carefully controlled. Apart from the fact that such experiments have been made already and that I therefore am fully justified to quote their results I again wish to state that I only mean to refer to the practical observations in order to explain the indications. With all forms of diseases the cutaneous action is strongly stimulated by the baths, hence an increased circulation and change of substance follows by which insufficience of nutrition, if not too far advanced, may be compensated. Especially powerful is the stimulation excercised upon the skin and the nervous system, particularly also upon the spinal marrow as caused by the carbonic acid contained in the Nauheim baths. It greatly helps to strengthen the spinal marrow and to remove insufficience of nutrition.

The form of central chronic affection of the spinal marrow coming most frequently under treatment here are tabes and myelitis. Excluding all doubtful cases there remain 89 cases of tabes which I myself have treated. With 73 of them syphilis was still present or had once been existing. With 21 of these cases the disease appeared only as a consequence of the infection. With some of them there was a long interval (up to 26 years) between the infection and the first symptoms of tabes. With 30 cases the process had been very rapid in as much as in the course of 30 years complete paralysis (disability to walk) had set in. With 43 cases the process was very slow in as much as the disease had come to a standstill in the first stage or that a standstill was brought about by the use of the Nauheim baths. Four of the patients became quite blind and with one who at first

felt very much benefitted by the cure here this good effect unfortunately did not last long.

With all 73 cases, where syphilis was combined with the disease, mercury treatment had already been tried or was applied here, these latter cases offering the best result. As a rule I prescribe mercury to be applied in doses of 3—4—5 gramm at night before going to bed (very well trained attendants being at my disposal) the bath is taken in the morning. It all depends upon the patients general state of health how frequently the baths can be taken. As soon as salivation sets in, the mercury treatment is stopped for a time whilst the baths are continued. The strength of the baths has to be regulated according to the constitution of the patient and the general state of his health, it also makes a great deal of difference whether the patient is suffering from shooting pains or not, altogether it can be judged most accurately from the reaction setting in after the first few weak baths have been taken. As a rule the baths containing carbonic acid agree well with patients suffering from tabes, it however is a very remarkable fact that patients in the most advanced stages are benefitted most by the strong effervescent and the current effervescent baths. Shooting pains increase, according to my experience at the beginning of the treatment — but only at the beginning — later on they subside. In one case only I had to stop the baths altogether as the pains (though weak baths of 27° R. and of 5 minutes duration only had been applied) increased after each attempt in such a degree that insomnia ensued. Patient then left Nauheim and went to some hydropathic establishment where, according to what I heard from him, half baths and treatment by galvanism brought about a good effect. The much ventilated question

of temperature is to be answered with regard to Nauheim that the upper limit is 26° R. and the lower 20° R. Of course there are exceptions to the rule but they are rare, only a very few patients require a higher temperature if once they have learned to keep quiet in the bath — It is a well known fact that with baths containing C_2 O_4 each movement produces a sensation of chilliness. Ceteris paribus I follow the rule to gradually lower the temperature of the bath by $^1/_2$ degree each time and to also let them last longer if it possibly can be done. The majority of cases stand these baths gradually cooled and prolonged up to 20—25 minutes duration quite well. As soon as a sensation of chilliness is felt the patient has to leave the bath at once. The fact that Nauheim baths only require a temperature of 24° R. whilst for instance Aachen baths, according to the records made by Schutter, require a temperatnre of 27—28° R. in order to bring about the same effect, secures to Nauheim an immense superiority in as much as for ill-fed patients of this kind the tonic effect caused by a cool bath is very important. At the same time, these patients so liable to colds gain strength from baths with a cool temperature.

With regard to the possibility of curing tabes in Nauheim I have to say that before the patellar reflex was discovered I fancied, I had known two patients to have recovered, the atactic symptoms having completely disappeared. There was no more paralysis and the patients themselves seemed or believed themselves entirely recovered. Since however the absence of the reflex has become an important criterion of the diagnosis and since its reappearance has been proved to be an indispensable symptom of complete recovery I have not been able to

state such a success. The number of patients however with whom some great improvement almost equal to entire recovery or a standstill of the disease has been brought about is a comparatively large one. I do not know whether my colleagues in Nauheim have observed the same fact, I at all events have noticed that with all those patients who besides the symptoms of tabes are also suffering from paralysis of the bladder this latter affection is removed first. I know only one case with very serious atactic symptoms combined with paralysis of the bladder and of the ocular muscles, where ataxia has been completely cured whilst the paralysis of the bladder still renders necessary the application of the catheter (this being one of the cases with which mercury treatment and baths had been applied together).

Those cases of tabes not combined with syphilis — 18 of these have come under my observation — have been treated according to the same balneological rules. With 3 of them a mercury treatment was gone through here whilst with the others it had been applied before without however producing any effect at all. Yet I cannot help stating that with the syphilitic form my results on the whole are better, which I think is due to mercury.

I pass over the record of cases connected with mercury treatment though some of them were followed by an important improvement equal to real cure. I confine myself to report briefly two cases which will show what can be done in Nauheim with cases of central paralysis.

The case described here is one of pure tabes.

Mr. N., a subaltern who, being in limited circumstances, had to work very hard, scarcely ever got into the open air and had a great deal of grief on account of family-misfortunes, fell ill in 1881,

complaining much from giddiness and nausea. The illness was supposed to be a chronic gastric affection of the stomach and the treatment was according to this diagnosis. After some time tickling in the feet and the legs, followed by a sensation of numbness, was felt. Unsteadiness in walking, difficulty of descending steps increased. His condition upon admission in June 1881 may be described as follows: miserable looking, pupils unequal, paralysis of the right ocular motor, absence of reflexes, inability to stand erect with his eyes shut, impotency (sexual incapacity, no ejaculation), sensibility very much diminished; insomnia and for the last few weeks asphyxia on both hands. After having taken 24 baths (4 brine, 12 thermal and 8 effervescent baths) the patients state of health was as follows: bladder and rectum normal, reflex of the abdomen distinct, patellar reflex however still extinct, general state of health satisfactory. Patient left Nauheim very grateful for the improvement he had not dared to hope for so soon. In a letter written some days after his return home, he says that his journey has been ever so much better than the other on his way to Nauheim when he had to be lifted into the railway carriage. He also stated to have recovered his full potency. Patient has been able to return again to his employment, he only is galvanised for some weeks every year. No relapse has as yet taken place and so it may be concluded that by the Nauheim treatment a standstill of the disease, until then progressive has been caused.

Miss N., thirty-three years old is described as suffering much from „nerves". From her 11th to her 13th year she has been suffering from St. Vitus dance; there is evidently some hereditary weakness (two brothers of her mother are in a lunatic asylum, one died from paralysis). During the winter 1871:1872 patient was suffering much from headache and from giddiness. Some time afterwards she complained of rheumatic pains, first in the left side of her chest and later on the right side (Intercostalneuralgea). All at once after having at one occasion remained for a long while in a wet place violent shooting pains in both the legs (especially in the knees) and in the stomach were felt. The physician diagnosticated an acute inflammatory uterine disease, he prescribed poultices to be put on the stomach and a dose of Morphia to be taken. Patient fell asleep but on waking both her legs were paralysed

and soon after paralysis of the bladder followed. Unfortunately there are no reports whatever as to sensibility, reflexes and so forth. During the next three months menstruation was stopped altogether and patient suffered much from constipation. Instead of paralysis of the bladder incontinence of urine then set in, the shooting pains and the gastric fits also continued with varying intensity. In February 1873 patient left her bed for the first time but in attempting to stand she at once fell on her knees trembling violently. Patient was then galvanised (with an induction apparatus of Dubois Raymond) and began to use crutches in order to learn to walk again. In July 1874, about 2 years after the first attack of paralysis patient arrived in Nauheim. A very tall and very thin lady with an exceedingly pale complexion. It was only with great difficulty that she was able to rise from the sofa leaning on the table with both her hands. After one minute only her knees began to tremble, she staggered and had to sit down again. To stand erect with her eyes shut even when supporting herself on the table was a thing altogether impossible to her. Supported on both sides she tried to lift her foot but was only able to drag along; she said she felt as if walking on smooth velvet, no carpet however covering the floor. Sensibility of the lower limbs was entirely gone, even a sharp prick with the needle into the lean muscles was not felt. Incontinence of urine when lying down but only very little whilst sitting and not at all when standing or walking. Treatment: thermal baths containing carbonic acid from spring VII mixed to one third with fresh water and an abundant diet. Blaifair-Mitchel had at this time not yet come forward. I only told the attendant to impose no restriction whatever upon her as to food.

After having taken 15 baths patient was for the first time able to walk through the room supported on one side, but the easier walking by and by became to her, the more I was able to notice the walking characteristic to tabes. Walking and standing were now practised assiduously; patient took, instead of the thermal baths, current baths out of spring VII and XII. After a treatment of only 6 weeks and after having taken 29 baths patient left Nauheim, her health improved so far as to be able to rise without assistance und supported by a stick to make about 60 steps, a greater exertion still producing trembling of the lower limbs and a feeling of anxiety. Patient was also able to stand erect without any support for a

rather long time but swayed very much when attempting to stand with her eyes shut. Sensibility had returned to the front part of the lower limbs, a touch on the back part was felt but no distinction as to sharp or blunt could be made. The state of the bladder was again normal, only a desire to micturate frequently still persisted. There had been no pains during the last 3½ weeks, the general state of health was excellent. Some time after patient had left I heard by letter that her weight had increased by 17 pounds, a statement the correctness of which I cannot answer for but which appears quite probable considering the greater amount of food patient had been taking of late. Patient never came back to Nauheim, years after however I heard from another patient that she was getting on very well but that her mode of walking still shows the characteristic signs of tabes.

The diagnosis of this case not belonging to the 89 cases of tabes mentioned before and sent to Nauheim before the examinations of the reflexes used to be made is extremely difficult. The sudden apparition of paralysis does not agree with tabes but during the preceding winter patient had suffered much from headache and giddiness which symptoms in this case may be considered identical with unsteadiness of walking. Then too the very painful intercostal neuralgia may have veiled the symptoms pointing to tabes — at all events there were distinct symptoms of ataxia and the mode of walking was and remained that of tabes. Though perhaps no pure case of tabes (chronic sclerosis, progressing slowly) but rather some complication of the acute paraphlegia of a nervous person with beginning sclerosis, I could not help recording this case as it seems highly important to me to dwell on the effects of the bath in cases of affections of the spinal marrow and of the nerves.

The relation of Nauheim to tabes may be characterized as follows:

The Nauheim baths have proved to be highly beneficial with tabes in all its different degrees and though there are no cases of entire recovery a considerable improvement may almost always be depended on and often the disease is brought to a standstill. An improvement of the general health and increase of strength are sure to follow and in recent cases the atactic symptoms and paralysis are in some degree diminished.

The treatment begins with simple brine baths of 26° R. lasting from 7 to 10 minutes. Later on natural thermal baths of lower temperature (24° R.) and longer duration (up to 20 minutes) are applied and after these effervescent baths and current effervescent baths artificially cooled if necessary. It is only very rarely that a very low temperature of the bath is required, though in one case I had it lowered to 20° R., the success being excellent.

I must not forget to mention that with all cases of tabes I recommend an hour's rest after the bath and that I have often noticed any exertion whatever after the bath to be of bad influence. In the course of the day however gymnastics and massage are applied. I do not any longer apply electricity during the bath-treatment, having found that these two treatments do not agree with each other, irritability, insomnia etc. being called forth. I only apply it in such cases when the patients themselves wish it and especially when a single nerve is to be treated, for the majority of these patients sent here by specialist (electro-therapeutics) have strict order to continue electricity as an after-treatment.

Myelitis in its various forms is very closely related to tabes and requires the same treatment.

According to whether it is a case of irritation or of paralysis and according to what the stage of the particular case at the beginning of the treatment is, baths of different concentration and temperature are applied. With no other disease an indifferent application of the baths would turn out a greater mistake than with the various forms of the disease denominated in a general sort of way as Myelitis. I only mean to suggest here that in general baths with a cool temperature (below 26° R.) are less suited and that a higher temperature often has the desired effect. The same is the case with spastic spinal-paralysis combined with an increase of reflexes and violent muscular spasms. I also wish to particularly emphasize the fact that in cases of myelitis as well as those of lateral sclerosis the baths containing carbonic acid applied with gradually increasing strength are producing a good effect. Whether myelitis is also caused by syphilitic affections is a question not yet solved. I believe to have met with such cases and have then (analogical with the treatment of tabes) applied a mercury treatment which has proved so successful that ever since I am inclined to repeat it in every other case coming before me. I have also to mention that I do not consider massage and gymnastics as producing the same good effect in cases of myelitis as in those of tabes, at all events I altogether object to apply them in the first stage of the affection. Two cases of myelitis where the improvement obtained was equal to almost a complete cure are of a recent date; some more are recorded with which a marked improvement has taken place.

Leptomeningitis, meningitis spinalis or rather paralysis proceeding from them also prove excellent objects for a careful Nauheim treatment.

In cases of hemiplegia caused by cerebral apoplexy a marked improvement mostly follows the treatment; paralysis being quickly and completely removed. In the summer of 1887 two gentlemen — one of them 69, the other 73 years of age — have been treated with best success.

Neurasthenia, this disease of the 19th century is also treated here. It is treated here as well as in many other watering places, in hydropathic establishments in the asylums for patients suffering from nerves and in climatic places and they one and all are striving for the palm: there are many ways leading to Rome. Neurasthenia the symptoms of which remind the patient of tabes and bring before his mind the inevitable bath-chair, this neurasthenia depresses the spirits of those suffering from it as if it were tabes itself. It is therefore very important to raise the mental energy; the thermal baths and if they can be taken the effervescent baths are no doubt followed by highly beneficial results.

The various forms of hysteria manifesting themselves in the sensible and motor nerves, the excessive hyperaesthesia and the hysteric paralysis have been treated frequently in Nauheim and are sometimes cured completely.

I have had under my care two very severe cases of hysteric paralysis in young girls. The disease was of long standing and electricity which had been applied repeatedly had proved of no avail whatever. Our bathing treatment was followed by the most satisfactory result and it was particularly the cool temperature of the baths which brought about the desired effect.

Paralysis caused by a severe attack of diptheria has been in many cases removed in a remarkably short time. In one case of paralysis of the swallow (esophagus) local douches of a current of pure carbonic acid repeated several times a day have been of much service. Unfortunately these douches as well as the gas-baths (staying in a closed box into which a big jet of gas is being continually delivered) had to be stopped for the time as the „Gas-spring" which furnished the carbonic acid required for these kinds of baths has fallen so far below its spout that this bathing-establishment had to be shut up altogether for the time being. —

It would be too long and I should be transgressing the moderate limits of this essay if I were to enumerate all the various and partly complicated forms of affections belonging to this chapter. By all what I said about them I hope to have proved that the Nauheim treatment is of great value with the majority of chronic affections of the spinal marrow and its skins. These affections require the attention and the care of the physician in a higher degree than diseases of the heart and nowhere the fatal consequence of a „too much" becomes more strikingly apparent.

Next to the above mentioned affections the various kinds of neuralgia are ranging. I have seen the majority of neuralgias and my endeavours to treat them have been followed partly by a very good success partly by none at all. The one form of neuralgia which has come before me most frequently is:

Sciatica: The pure idiopathic form of neuralgia of sciatica is comparatively rare, whereas sciatica in general belongs to those diseases which are of rather frequent

occurrence. Whenever people suffering from rheumatism get sciatica, it is a rheumatic sciatica and this form is the most common of all. Affections of the bones and their skins and (with women) uterine diseases often cause sciatica. In this pamphlet therefore the different kinds of sciatica ought perhaps be treated together with the affections they belong to, but as the balneo-therapeutic method of treatment is the same notwithstanding the disease arising from various causes — the latter being only important with regard to temperature — it may be permitted to treat here sciatica separately as one of those affections coming under my care most frequently.

I have seen 159 cases of sciatica, 9 of which were bilateral, and in all cases the Nauheim treatment has brought relief. I cannot exactly say how many of them have been cured completely, but there were amongst these patients 37 whom I have dismissed free from any pain, whilst many others got well later on with the help of galvanism and massage or without it. 13 patients underwent treatment for a second time, some on account of the old disease, others for a relapse. By a treatment of 8 weeks duration I have cured a severe bilateral sciatica which had for 16 months kept the patient confined to his bed and to a bath-chair. Patient had been suffering from such violent fits of pain that he never was without morphia and by a continued use would certainly have become a morphinist. Patient who has changed his former lodging which probably was the cause of his illness, for a healthier one, has for the last six years remained free from any attack.

I always found the warm brine douches very effective with sciatica and I am looking forward to the new douches

of the bathing-establishment No. V which will enable me to make a better use of them than was possible in the old house with its old-fashioned arrangements. Besides the baths massage is also applied in cases of sciatica. According to my own experience the rheumatic form offers the best chances for recovery but it is also the one most liable to relapses. Altogether the Nauheim treatment is very much to be recommended with sciatica from whatever cause it may have arisen.

III. Scrofula.

The good effect produced by sea-baths and by a stay at the seaside have of late somewhat diminished the use of brine baths against scrofula. With all that however the excellent results obtained by all brine baths with that very same disease cannot be denied and so we are compelled to always consider scrofula one of the principal indications for any brine bath. I wish to particularly emphasize this fact with regard to Nauheim which now possesses a new bathing establishment (No. IV) furnished with the latest improvements and in which baths of every degree of strength are to be got. The Nauheim thermal baths containing $C_2 O_4$ have often been said to be too strong especially for children. I admit there have been failures but then the indication was in no way to be blamed for them but only the method formerly applied. I often have noticed that with the erethic form of scrofula our natural thermal baths containing $C_2 O_4$ are too strong since however we detract part of the $C_2 O_4$ from the baths and if necessary attenuate them with fresh water and since the duration has been reduced from $^1/_2$ hour

to 10 or 15 minutes I never have experienced any failure whatever. Still the influence of the baths is not based upon endosmose, that means the baths don't have any direct influence upon the condition of the blood and of the lymph, they rather have a reflex action, which transferred from the periphery to the centre, produces a total increase of the whole change of substance. Here too the amount of O in the blood as increased by the bath in opposition to the excess of C_2O_4 is of great importance. We know the influence which O combined with iron has upon the nourishment of the cells, if introduced in an increased quantity into the tissues, the formation of new healthy parts of tissue is made possible. The pastous look, which is such a characteristic of scrofula, as well as the excessive growth of fat promoting the venous engorgement are sure to disappear. The examinations of the change of substance made by Beneke, Lehmann and others with regard to scrofula have not yet been refuted. The much ventilated question as to what forms of scrofula ought to be sent to the seaside and which of them to brine baths may very likely never be decided though it has been maintained that those forms localized in the bones, the joints and the mucous membranes are more appropriate for treatment in brine baths whilst those forms showing a localization of the disease in the glands and the skin belong to the seaside. From the observations which I have made in Nauheim I might easily refute this assertion which I think has been first brought forward by Cazin, but I don't consider the question of much importance. I am firmly convinced that there is no possibility whatever of thus classifying the various forms of the disease and their different ways of treatment

but that only the constitution of the patient himself is to be taken into consideration. The experiences made on the different places at the coasts of the German sea and of the Baltic are of recent date only but if it really was confirmed that the sea was exerting a beneficial influence upon tuberculosis in its first stages, if there really was produced a beneficial influence upon the nutrition of the cells and the formation of the blood then of course all delicate weak anaemic persons or those in whom hereditary phthisis has been proved ought to be sent to the seaside. Still in the very cases of anaemic individuals suffering from scrofula I have obtained very favourable results in Nauheim. It was already in the year 1870 when I wrote in an essay: „The watering place of Nauheim and its relation to Kreuznach and Rehme“ published in the Deutsche Klinik No. 13 and 14:

> „Frequently a kind of scrofulous chlorosis in young girls has come under my treatment here and I found our brine-baths together with the use of Schwalbach Weinbrunnen to have a good effect.“

The observation then made has since been confirmed in many cases. At this time however I considered the simultaneous use of some iron water to be indispensable, supposing chlorosis to disappear under its influence only. Now I know that the iron water may be of very good use sometimes but that a satisfactory result may also be obtained without it and that the baths are the principal means of bringing it about. For amongst the young girls suffering from scrofula and chlorosis there are many who cannot stand any iron water on account of the chronic gastric catarrh and the excessive formation of acids

combined with their disease and yet a remarkable improvement of their blood can be stated.

Scrofula (as long as its bacillus has not been found) is to be considered a disorder of the functions of nutrition which upsets the balance of the integrant particles of the blood. Its localization is multiple, most prevalent however in the lymphathic glands. There seems to be a relation to phthisis in as much as children from parents suffering from phtisis become scrofulous whilst at the other hand a good many of those suffering from phtisis have been formerly subject to scrofula. The effect of the Nauheim brine baths as well as of the thermal baths containing $C_2 O_4$ is very powerful indeed and if properly applied is always successful. Chronic scrofulous opthalmias have been frequently cured here without any local treatment being applied, the same has been done with cases of scrofulous eczema on the head and in the face without these places being brought into direct contact with the brine. Thereby it is proved that the success in no way depends upon the local treatment, but that it is highly important to remove the disorder of the nourishing functions — the cause of the disease being removed the local affection disappears. During these last years 11 young married women have come under my treatment for various diseases (some of them suffering from uterine or heart diseases, 2 from rheumatism and 1 from periostitis), all of whom either in their infancy or soon after the setting in of menstruation I had treated on account of scrofula, some of them even repeatedly. With the exception of two scrofula had disappeared entirely and most of them (two were as yet childless) had borne healthy children. The most remarkable results have been obtained in the Kur-

hospital. There every one can witness how extensive swellings of the glands, scrofulous tumours, suppurating fistulas caused by necrosis, scrofulous affections of the glands and other severe forms do not only improve considerably, but are very often healed completely. Surgical operations very often are indispensable (necrotic bones have to be removed, parts of the skin to be resected, abcesses to be fissured), in all these cases the antiseptic treatment of course is employed.

The following report is meant to illustrate the fact that even in old severe cases of scrofula a Nauheim treatment is of great advantage.

A young man of the age of 20 years but looking like a boy of 15—16 years, belonging to a family whose members all were badly inflicted with scrofula, came here to be treated for an inflammation of the joints of the elbow from which he had been suffering during the last six years. His face his neek his chest and one of his hands were covered all over with scars from former swellings of the glands. There were eleven fistulas round the joints of the elbow, the bone was quite rough as felt by the sound, there was a fetid suppuration from the bone and rectangular anchylosis at the club-like swollen joint. The arm was so emaciated that nothing but skin and bones were left, the hand which also was frightfully thin and much smaller than the other showed a lateral ulnar flexion. Czerny had strongly advised the resection of the diseased joint and I too considered the operation to be indispensable. The young man however who felt far too nervous about it, insisted on trying the baths. I thereupon ordered thermal baths (from spring XII) with an addition of mother-lye (16 pints). Suppuration was made easier and the joint was covered during the night with a brine-compress. After this treatment being continued for four weeks all fistulae, but three were healed and patient who during the whole time has been drinking Karlsquelle and who enjoyed a very good appetite had increased by nine pounds in weight. He was then dismissed with a prescription of Jodine of iron and Phosphate of lime and ordered besides to take cod liver oil with phosphor during

the winter. He came back to Nauheim in May 1886; two of the old fistulae were healed but corresponding to the lower margin of the olecranon a fresh one had opened. The general state of health was excellent. The same treatment as before was prescribed. Three weeks later both the fistulae were healed. I now tried to strengthen the muscles of the arm by massage and by gymnastics and advised him to continue with both during the winter. In the spring of 1887 patient came again back here. There were round the elbow nothing but the scars from the well healed wounds left; the swelling of the joint had almost entirely disappeared; complete anchylosis. The muscles of the arm had become so much stronger that nothwithstanding its still ulnar flexion, patient was able to make use of his hand which until then had been quite powerless. As the patient was in perfect good health and only upon my special advice would undergo another treatment, I sent him home advising him to continue massage.

With regard to the much-ventilated question of a surgical treatment of scrofulous glands I strongly advise greatest care and restriction especially with respect to children. As long as the scrofulous dyscrasy has not been overcome, the extirpation of one gland or more is of no avail whatever, as very frequently below the very scar or in its neighbourhood new glands are forming and continue to do so after each operation. With grown-up people the case is different, especially in severe cases of infiltrated glands. I often have known compact masses of glands to disappear entirely after treatment in Nauheim, very often however the treatment even if repeated for several times has been of little success and then of course an operation cannot be avoided. With children and especially with girls I on account of the inevitable scar, always advise to desist from an operation until at least the setting in of puberty. This however only applies to the hard glands for as soon as a scrofulous gland shows

the slightest tendency for suppuration a surgical treatment no doubt offers better prospects of a rapid cure than any other treatment. With swelling of the glands I always advise local brine compresses to be applied. I for that purpose greatly prefer the thermal brine to the mother-lye which is otherwise employed frequently, the former not affecting the skin so much as the latter and the patient therefore being able to apply them for a longer time without interruption. These compresses in a good many cases have brought about an excellent result.

During the summer of 1886 I had under my treatment a young girl of 19 years who as a child had frequently been in Kreuznach and Munster am Stein on account of scrofula. She had then shown, as I was told, all the characteristic symptoms of scrofula (bloated face, thick upper lip, swollen nose etc.) and had been suffering from furunculi, eczema, severe opthalmia (old marks on the cornea still being visible), diarrhoea, swelling on the joints etc. but never „from the glands". Thanks to the treatment applied, a gradual improvement took place and from the 12th year the girl though always delicate had enjoyed good health and got well through whooping-cough and measles. Menstruation set in at the age of 14, intermittent, every 6th or 8th week only. In consequence of a cold she caught in church on the day of her confirmation, two glands of the size of a dove's egg appeared simultaneously below both the ears. The general state of health being satisfactory and there being no other symptoms of scrofula no baths were applied only Jodine treatment both externally and internally. Yet the glands remained varying in size however, for months altogether they were as big as a hazel-nut and then they began swelling again to their former size of a dove's egg, strange to say always quite symmetrically. But as they didn't give any trouble no further attention was paid to them until March 1886 when there appeared numerous glands on both sides of the neck, above and below the clericule down to the arm pit. They were of different size, some only large as a pea others like a hazel-nut. They appeared all to be connected for if one of the bigger glands was pulled downwards

this was being felt in the uppermost old gland. When patient first came here, I counted 37—39 different glands on each side, 8 of them in the right axilla and 5 in the left. Besides I stated a very severe anaemia (anaemic noise at the heart and in the blood-vessels, at the neck, fluor albus and, what until then had not been noticed a slight fever rising at night to 38,3°. There was no other change in the general state of health. I prescribed brine baths without $C_2 O_4$ of 10—12 minutes duration, ferrum dialysat (1:4) 25 drops to be taken in a glass of Ludwigsbrunnen after every meal, and brine compresses (flannel, well covered with oiled silk and bandaged very carefully) to be applied to the glands during the night. After the 5th bath 4—6—8 pints of mother-lye were added to each bath. After the 9th bath which all had been taken during the first fortnight and seemed to have agreed well with the patient a sudden indisposition befell her which in no way could be accounted for. The fever rose to 40,2 (104,4° F) at night, the skin looked very red especially all around the glands, which were more swollen and hurt very much, when touched which had never before been the case. — The lungs, the heart etc. were completely free. — Only an acute inflammation of the glands could account for the fever and time proved my suggestion to be correct. I ordered ice compresses to be applied to the glands, (a piece of gut sufficiently long, filled with ice put upon the glands which were well covered with a piece of dry flannel to prevent the skin from getting wet) and — quinine being supposed not to agree with the patient — I prescribed Natr. Salicyl (salicylate of sodium) and later on antipyrin, recommending at the same time the diet to be limited. The two doses of Natr. Salicyl (3,0 grm. — 3/4 drachm. each) which were administered on the first and the second evening were followed by a profuse diaphoresis, in the afternoon between 3 and 4 o'clock the fever began to rise. On the third day the maximum of temperature was only 39,1 (104,4 F) and from then, antipyrin being applied now, continued to fall slowly to 37,8 (100,0 F) on the ninth day of the illness when also the menses which were due set in during the night. On the fifth day of the menses the temperature was quite normal and remained so since. On that same day (a fortnight after the high fever first began), the glands had almost entirely disappeared, only the old glands below the ear and 2 or 4 in the

arm-pits could still be felt. Now the baths were taken again, patient however not having as before the strong baths mixed with mother-lye, but thermal baths from spring VII, first accustomed with water, later on mixed with water from spring XII and at last thermal baths from the springs VII and XII with a mixture of 6 parts of mother-lye. From that time there was a steady improvement, patient who had become very weak from the fever soon recovered her strength, the iron was substituted by Hoff's manganese and an appropriately strengthening diet was prescribed. A fortnight after patient left Nauheim having lost 5 pounds in weight but looking much more healthy than when she first came, and being almost entirely free from glands. Last January — 1 year after the treatment had been gone through — patient wrote to me that the „many glands" had disappeared long.

Last summer I had another chance of observing the remarkably rapid action of our baths upon chains of glands.

It was a desperate case of leucaemia in a young woman girl of 16 years. There were chains of glands similar to those described above, they also had appeared quite suddenly after having been preceded by various scrofulous affections in childhood. These glands also decreased in size and almost entirely disappeared after our baths being applied. Liver and spleen however continued to swell, dropsy increased and there was a continuous fever which rendered the continuation of the treatment impossible. Patient died from hydropsy last winter.

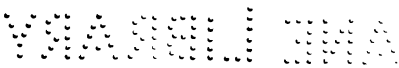
I have recorded these two cases to prove the **effect of our baths** upon swollen glands and to illustrate **the decrease** of scrofulous swellings of the glands **during the treatment** here in consequence of it.

Another case out of one of the first years of my practise **is worth mentioning** also. Microscopical examination of the **blood was then** made and a remarkable increase of whether **there was** leucaemia or whether it was one of those **cases known** as scrofula without glands was then made. The **case however** there was a leucaemia [illegible]

ment is able to compensate disorders in the mixture of the blood.

N. a miner aged 39; his parents who are still living are quite healthy, as are also his four brothers and his sister, he himself had hitherto always enjoyed good health, he is married and his four children are all strong and healthy. Three years ago he had to work in a very deep wet mine rather far away from his village. He could not go home for his meals as he had been in the habit of doing, he mostly got his dinner cold and altogether fared worse and more irregularly than usual. The first symptom of illness which patient noticed were rheumatic pains in the shoulder. This was in 1870 and the pains often became so bad that patient had to leave off his work, profuse perspiration however always made them go away again. At the beginning of the winter, patient says to have suffered from gastric fever, and since that time he is very much liable to diarrhoea. Two months later he began his work again but in spring he suffered from great weakness, his feet began to swell, he lost his appetite, was suffering from continuous perspiration at night as well as in day time and became suddenly very thin. He lost his hair and his whole head felt so sore that he always had to wrap it up well in a shawl. He had to leave off work altogether. He tried cod-liver-oil. At the end of April patient noticed some lumps on both sides of his neck which grew rapidly but did give him no trouble whatever. In May two other lumps in the arm-pit showed and the doctor adviced him to go to Nauheim.

Status praesens on admission in June 1872: a middle sized man with very pale complexion, thin reddish hair, looking very weak and broken down. The skin feels wet and cold, the tongue is covered with a layer of dirty gray, pulse 96, weak, dulness of the heart and sounds normal, on the back side of the right lobe of the lungs symptoms ot former pleurisy, liver swollen, the surroundings of the stomach and abdomen inflated, stomach very painful to touch; spleen very much enlarged, oedema on both lower limbs. On both sides of the neck rows of big hard glands extending to the middle of the cheek, the skin on these parts being full of numerous dilated veins. In the left arm-pit one large and one smaller hard lump (both moveable), urine contains small quantity of albumen. Unfortunately there are no notes in my books as to temperature



but I remember quite well, patient to be feverish when he first arrived here, for I made him stay in bed and let him have his first bath only on the sixth day.

Treatment: thermal baths from spring XII 10—12—20 minutes duration, no bath every third day; in the morning before breakfast 3 glasses, 6 ounces each, of mixed Kurbrunnen and Ludwigsbrunnen to be taken; during the night brine compresses applied to the swollen glands; a good strong diet, a good deal of meat and wine. The baths agreed very well with patient, he took 33 of them, the last 18 mixed with mother-lye up to 16 pints. His appetite soon returned and when patient left, the profuse perspiration had ceased. The two hard lumps in the arm-pit had almost entirely disappeared; the rows of glands on the neck however though they had become much smaller were quite as hard as before. Liver and spleen were reduced to their normal size, the oedema had disappeared also the albumen; the general state of health now being quite satisfactory. Patient took a quantity of brine away with him in order to continue the compresses, I also gave him a prescription for Jodine of iron. Next summer patient came back to Nauheim but so much changed that I did no recognize him: a healthy looking man, with a good long beard and short cut hair stood before me with a strong upright bearing. He felt quite well and healthy. After having well taken care of himself for two months more after his cure in Nauheim he had the whole winter through done his usual work but not in the same damp mine as before, and declared to feel perfectly well now. The swelling of the glands on both sides of the neck were reduced to some small hard lumps, the face being quite free from them. Patient this time could only take 18 baths. Some years later I had a chance of seeing the good industrious man again, he in the meantime had been promoted to be a surveyor, and I was glad to find him in perfect good health, the swelling of glands having entirely disappeared.

I wish to especially point out that I consider the Nauheim treatment indicated with all forms and all localizations of scrofula, also with skin diseases caused by scrofula though many specialists are of different opinion. Provided the classification of scrofula into the torpid and

the erethic form being correct I can only say that I have met with the very best result in treating both the forms here. The constitution of the patient as well as the full extent of the disease have to be taken in due consideration, no baths with a strong mixture of mother-lye must be applied in all cases but baths must on the contrary always be carefully adapted to each special case and then the same beneficial effect is sure to be obtained both with the torpid as with the erethic form of the disease.

Akin to scrofula is:

IV. Ricket

usually called english disease. Ricket too is mostly caused by disorder of the blood, but the distinguishing feature of the disease itself is its being almost always localized on the bones. There are especially the epiphyses of the arms and the lower limbs the swellings of which enable even the non-medical to recognize the disease. These localizations however are not the only symptoms of the disease, they only are the most common form, whilst in reality all bones especially also the endings of the joints are subject to ricket, most frequently amongst these the sterno-costal joints. The observation, based upon exact experiments, that the Nauheim treatment by acting upon the assimilation of the food, increases the excretion of „used substances“ and impedes the excretion of the phosphoric acid, which is of so much importance for the action of the cells, accounts for the beneficial effect it almost invariably produces upon this disease. As a rule I refrain from ordering a drinking cure, the patients for

the greater part being children of a very tender age, but I almost always prescribe carbonate of lime and phosphate of lime which though not always promoting a better growth of the bones still help to remove the chronic gastric catarrh which mostly is combined with the disease. This being done I make the little sufferers go through a regular milk-cure the arrangements of which are excellent here. As an aftercure, sometimes also during the milk-cure, I as a rule prescribe phosphoric acid and I have experienced the most favorable results from its use. Staying in the graduation houses for some hours per diem also proves highly beneficial, I have often noticed the good effect though I do not know whether it is due to the great amount of ozone as contained in the air there (jodine paper turns into a deep-bluish black after a few hours only) or whether it is brought about by inhaling the small particles of salt. Children suffering from very severe forms of ricket often increase here during the cure by 2—5 pounds; many cases of spina ventosa of the phalanges have been cured here and many children have been saved from everlasting illness and the danger of being deformed for the whole of their lifetime.

The most striking results with regard to children suffering from ricket have been obtained in the hospital, with these however it is not the effect of the baths which produces so great an improvement, there are other highly important moments which help to bring it on. It must not be forgotten that the children treated in our hospital all belong to the lower classes, often to the poorest of the poor. Cleanliness, the healthy fresh air (indoors and out of doors), the good nourishing food (meat every day and much milk) and the excellent nursing of the

diaconesses are by themselves producing such a beneficial effect upon the health of these poor little ones that it only wants to be supported by the baths to bring about a good result. With children out of my private practise the case is altogether different. With them quite the reverse is often required, with these little overfed beings I often have to insist upon their being kept on a simpler, less consistent diet. I always pity those rich poor little sufferers whenever I see them trying with their poor carious teeth to get down a beefsteak, swallowing the inevitable but thoroughly useless Tokay-wine with it. Fortunately a very strong reaction against this mania of overfeeding has sprung up of later years, yet I often have many a hard struggle with the „affectionate mother“ in order to overcome her resistance on that point. „The child doesn't care for milk“ is the usual answer to the advice to give him more milk and less meat, though experience always proves the dislike of the child to vanish very soon, if only a proper amount of firmness is used. There certainly is no better food for children suffering from ricket than an abundant quantity of good milk. I hope to be forgiven this digression I only wished to point out in what way good results may be obtained. I have had under treatment three children of the same family, a family very well off and living very comfortably. With the two younger children the disease was but slight, the eldest however was suffering very severely from it. The head of the boy who when he first came here was about three years old, was remarkably big, the forehead high and prominent so that the face seemed to stand backwards. The look of the skin which was full of veins reminded me of a wax-figure, all the teeth except the

eye-teeth were carious, there was a badly smelling foetor ex ore, the tongue was dry and fissured, the chest showed the characteristic keel-like shape and looked as if it was too short, the lower part of the ribs and the stomach were very much inflated, both the legs from the club-like knees downward were bent so much that if the boy was put on his feet only the outside of the sole of the foot touched the ground. Both his wrists too were very much swollen and so were the phalanges on his left thumb and on his right forefinger. This little patient came to Nauheim for three years running, at the two following years he went to the seaside and then came back again to Nauheim on account of eczema which he had been suffering from for the last four months. The eczema very soon began to dry and to fall off and the boy who by this time was nine years old, left Nauheim very much improved. No more signs of the former disease were left, only the chest still showed some of the shortness peculiar to ricket. Patient was tall for his age but well developped though rather thin. I saw him last autumn when 14 years old; a scarcely visible scar on the left thumb shows the place where a small ulcer had suppurated for a long time. His brother and his sister who went through the same treatment also showed no more signs of the former disease.

V. Diseases of Women.

Since bathing is taking so prominent a part in the treatment of chronic affections the brine-baths (as well as the steel-baths and recently the mud-baths) are enjoying a well deserved reputation wherever treatment of

the manifold chronic diseases of the sexual organs of women is concerned. Amongst these bathing places however Nauheim as combining brine-baths and steel-baths — analogous to Pyrmont — takes a first place. Spiegelberg (whose family has come here for many years and whose son experienced the very best effect from it when suffering from hearts disease) has seen many of these patients here and has often told me that he has seen from no other baths so striking und so powerful an effect upon the disease in question but of Nauheim. Professor Dohrn in Königsberg (formerly when in Marburg my own highly valued master) who had been very sceptical formerly as to the effect of baths in opposition to local treatment, has spoken very highly of the good results of our baths which have come to his notion. And yet the number of gynaeological cases has become much less during these last years, at least so when compared with the increase of patients in general. It is from this reason that I wish to particularly point out the excellent results obtained with these kinds of disease, they are by no means as well known as they deserve to be because in all publications during the last decades only the diseases of the heart and of the spinal marrow have been recorded.

Fluor albus, the benign innoxious kind as distinguished from the putrid and malignant, this common and tiresome trouble of the female sex is almost always much benefitted by a cure in Nauheim and is very often completely cured. In most cases I have noticed the disease to become worse at the beginning of the cure, the fluor even very often sets in at this time with patients who at other times do not suffer from it, this however only lasts a few days and is to be considered rather a good

sign, which is almost always followed by a complete cure. Internal brine-douches (injections) the temperature and concentration of which has to be accommodated to each single case, are a great help. In every lady's cabin there is an irrigator so as to render possible the use of the douche during the bath, which I besides always advice to be taken with a glass tube. This method appears ever so much safer than the old one when a tube leading into the bath was fastened to the pipe delivering the brine from spring VII or XII, the uterine douche thus being supplied straight from the suckers. In this way however the pressure often proved to be too strong, the temperature could not be modified according to the different cases, the amount of C_2O_4 also often caused an over-irritation which united to the well known inclination of patients to use the uterine douche as long as possible called forth inflammation. This danger has been entirely removed by the present improvement. I have yet to mention here the bathing-speculum and to express my strongest disaproval of using it. Formerly it was quite the fashion here to take the bath with such a speculum though I never saw any advantage derived from it but frequently great harm done by it. It is for this reason that for years past I strictly have forbidden the use of the speculum which still many sufferers from uterine diseases are provided with when coming here. A brine douche certainly is of much better use than a speculum with its many tiny openings, besides a strong irritation scarcely can be helped and the uterus very often is hurt by a shock when moving about in the bath.

Chronic metritis and endometritis. Whilst with the innoxious cases of fluor albus it is a question only of

catarrhs of the mucous membranes, inflammation of the uterus and its mucous membrane have to be dealt with here. Chronic metritis is almost always favourably influenced by a Nauheim treatment but in cases of endometritis it does not appear sufficient and should be recommended only as an after-treatment after the real cure by means of scraping the uterus has been gone through and the necessary injections have been applied. With a good many of these cases this local treatment has been gone through here before beginning with the baths which then invariably gave a most excellent curative result and in many cases also offered a security against a relapse. As to gonorhea which in reality occurs much more frequently in the practise at bathing-places then might be supposed a-priori, our baths often produce a beneficial effect. After many different experiments I now always at the end of the treatment here have added to the brine douches Zincum sulphuricum (1:200—100) the use of which I also prescribe to be continued after the cure here being finished. With many cases a drinking cure gone through simultaneously with the bathing treatment has proved to be of good use. Both Karlsbrunnen as well as Kur- and Ludwigsbrunnen mixed have rendered excellent services. Ladies who are tired too much by walking before having their baths may very well take the mineral water in bed or when getting up. Careful diet, a quiet regular life (no active partaking of the réunions dansantes) are indispensable conditions in order to obtain a satisfactory result.

On the whole I abstain as much as possible from any surgical and medical treatment whilst the baths-cure lasts. With many cases, however exceptions from the rule have to be made, especially with those sent here by

specialist as well as with those where there is yet a chance of entire recovery.

Ulcers round the orificium uteri (erosions) are often healed with the help of baths and douches only and without applying corrosives. Ulcerations called forth by putrid discharge and affecting the lower textures disappear sometimes though not quite so frequently, without any local treatment being applied.

Tumors, neurosis as well in as at the uterus are also deriving a highly beneficial effect from the Nauheim waters. I also have observed fibroids really to diminish, a fact which I purely from theoretical reasons did not consider possible before. But though the positive decrease of a tumor may be of rare occurence only the fact of its being possible appears sufficient and even if a tumor cannot be reduced in size the treatment never fails to give relief to the patient. I know two ladies inflicted with fibroids who come here every year and thus only are enabled to escape an operation which in those cases of course offers the only chance of entire recovery.

The success attending the treatment of bleedings, caused either by a tumor or called forth in consequence of atonia or hyperaemia of the uterus appears particularly striking. It is rather difficult to account for this effect, which however is well known at all brine-baths, all the more so as the baths ceteris paribus increase bleedings from the uterus, by almost invariably causing the menses to set in sooner and with cases where the menses as a rule are weak calling forth a more profuse bleeding. The Nauheim waters possess a special power to stimulate irregular or weak menstruation. I know a good many cases with which by means of one single

treatment in Nauheim inveterate troubles of menses nimiae have been removed entirely. According to the effect thus produced a more profuse bleeding might be expected in cases of habitual bleedings and yet strange to say quite the reverse takes place. This fact proves clearly that with different causes the same means may influence favourably the different symptoms. Here too brine baths free from C_2O_4 have to be applied first, later on the thermal baths containing C_2O_4 but I never prescribe effervescent baths. Great care has also to be taken as to the temperature of the baths.

With cases where scanty menstruation is to be increased I prescribe a temperature of 28° R. whilst with all forms of metrorhagia and with profuse bleeding I never have it raised beyond 25° R. and often have found a lower temperature even down to 22° R. to be most effective. I think it was Scanzoni upon whose indication a current of carbonic acid was first used in order to obtain a premature birth and encouraged by it I tried to treat metrorrhagia in the same way. I came to the conclusion that if by introducing a current of carbonic acid the uterus gravidatud is being stimulated to so powerful a contraction that the expulsion of the foetus follows so the free uterus will contract thus as to his vessels to become considerably straigthened and the bleeding will stop. I have several times in cases of uterine bleedings and in those caused by fibroids tried a uterine douche with pure carbonic acid but as they were of no avail but on the contrary were accompanied by very serious inconveniences I was obliged to give up these experiments. At the other hand however I have been able to state the stopping effect of our (cool!) thermal baths to be more energetic

than that of the simple brine baths. I confine myself to record these apparently contradictory observations without having been able to control them by scientific examinations.*)

Patients suffering from Metro- or Menorrhagia are allowed to take the baths even at the time of bleeding and I never have experienced any bad effect from it. Only during the menses which are supposed to last for five days no baths are taken. A lady, mother of 12 children had been suffering from Menorrhagia for the last nine months though there was no tumor nor polypus. The menses were regular but the bleeding afterwards always lasted for 3—3 $^1/_2$ weeks. The lady began her treatment on the 16th day after the last menses. The bleeding was stopped after the first bath. Then the menses set in three days too soon and lasted for four days. On the 5th day the treatment was continued. Eleven days later a bloody fluor was excreted, the fluor continued but after the 3rd day was not longer bloody. Patient stayed here until the next menses which set in exactly on the right day and lasted for five days. Afterwards six more baths were taken (30 altogether) and as the fluor albus still continued tampons of potassa applied three times. In the course of seven years patient has come back here five times, she never again suffered from Menorrhagia, the fluor albus has disappeared and since by means of massage and an appropriate diet the superfluous fat has been

*) I know miscarriages to have occurred five times during the course of treatment, once in the second and four times in the fourth months. Pregnancy on the whole is no contra-indication only in the fourth, the fifth and the seventh month it is not allowed to take the baths.

diminished, patient according to her own words „feels better than ever before in her life."

The form of diseases of women which is very common and which by their manifold complications and their variety of localizations are one of the greatest nuisances of womankind are:

Pelvic exudations. Thus may be called all those different kinds of exudations which either are chronic from the beginning, or the consequence of past acute inflammations. Whether they be perimetritic, parametritic or so-called free exudations the effect of the treatment is the same with all of them. All exudations, the smallest as well as the compact ones which are so often mistaken for large tumors, also the still serous fibrinous suppurating ones which by pressing upon the nerves, the vessels or the neighbouring organs, cause either violent pains and oedema or either call forth paralytic symptoms and the entire inability of moving and often are accompanied by a continuous sub-acute fever, upon all these exudations a Nauheim treatment is having the very best effect. Recent puerperal exudations offer the comparatively best prognosis*). Baths and brine compresses upon the abdomen during the night are sufficient with the majority of cases whilst with cases of inveterate exudations, an appropriate careful massage soon brings about complete absorption. Such exudations offer the greatest number of „show-cases" for it happens by no means seldom, that a poorly-looking lady, unable to walk and confined to a bath-chair when arriving here, leaves the place a few weeks later looking

*) Notwithstanding their now being considered as „infections" and caused by bacteria.

healthy and walking without any difficulty whatever. It is the powerful resorbent effect of our simple thermal baths as well as of the thermal baths, containing C_2 O_4 which brings about so prompt and so striking a result. Other baths especially mud-baths are rendering the same good services, but I am unable to point out special differential indications as to which forms of the disease simple brine baths ought to be applied, to which of them the thermal baths containing C_2 O_4 and to which again the mud-baths.

Those exudations which have nothing to do with the female genitals, such as pelvic exudations after diseases of the bones, psoas abcesses, free exudations discharged by the rectum, residues of perityphlitis have often too come under my treatment here, and the results were quite as satisfactory as with the former kinds. A gentleman who in consequence of repeated trauma (fall from his horse), was suffering so badly from pelvic exudation as to compel him to the use of a bath-chair, and who at one time had to keep lying quite flat for weeks, this same gentleman was so much improved by a ten weeks treatment here that after having gone through a regular massage-cure the following winter, he now is again able to walk and ride on horseback without the slightest difficulty.

Before closing this chapter, I cannot refrain from adding the report of one special case, which will show more clearly how a complete cure may be obtained in even apparently hopeless cases.

Mrs. N. a lady of high imposing stature, mother of two children, had with the exception of some slight attacks of chlorosis, always been healthy. Menstruation regular, pelvis normal. Mrs. N. says (?) to have had a miscarriage in the sixth week. Bleeding, according

to her statement has then been very profuse. Since then Patient became very thin and suffered from a dull pain in the abdomen radiating to the hip-bones and the lumbar region. When walking the pain became so bad that patient could walk hardly longer than for 10 minutes at a time. Painful urgency to urine, during and after each evacuation a burning pain. Menses irregular, 8—14 days late, very painful. The main complaint however was inveterate constipation and whenever at last there was an evacuation the pains were so dreadful, that patient declared she would ten times rather undergo a delivery (?) sic! Patient had been under medical treatment in the Clinic at Breslau for 3 months, sitting-baths, jodine tampons, hot gruel poultices, hydropathic wrappings etc. however had given her no relief whatever. All possible purgatives had been applied, clysters all in vain. Seventeen months after the supposed miscarriage patient arrived in Nauheim. There was from the retroverted low uterus to the symphysis, a long pointed vaginal part, hard as stone and so was the uterus too. The uterus was completely fixed, the slightest movement was rendered impossible but no pain was felt, though I pressed it hard. The front side of the uterus showed nothing remarkable except its hardness, further to the back however somewhat below the spot where the collum leads into the corpus, there was felt a large tumor of the same hard consistence and spreading to both sides. It was only by an examination per anum that certainty could be got.

A hard tumor of the shape of a bat (big cylindric middle part with 2 broad wings) appeared to be firmly attached to the uterus, and pressed in so closely into the small pelvis, as to render it impossible to put the finger behind the tumor. The rectum, thus squeezed together from the front to the back, was completely shut up which accounted for the constipation. When after 11 days notwithstanding all the many purgatives that were given there was still no evacuation, whilst the appetite was getting better every day, patient had to be brought into the genu-brachial position and after having remained in it for some time, I at last succeeded to introduce a catheter behind the tumor into the rectum. Patient was suffering agonies from the procedur and it required no end of patience on my part to introduce the proper amount of soap-water and Ol. Ricini into the rectum. Then however there was at last, (mostly

owing to the before mentioned genu-brachial position) an evacuation alvi, such as I never had seen before nor had ever thought possible. Patient at first took the natural thermal baths, later on I prescribed mother-lye to be added to them, during the night brine-wrappings were applied, instead of the usual compresses on the abdomen, the whole pelvis was wrapped up in flannel immersed in brine, and big brine tampons where put into the vagina. I also prescribed sitting baths to the patient which as a rule I only seldom apply, besides patient was advised to get as much motion as possibly she could, and to take 3 glasses of Karlsquelle every day. Good care was taken to prevent another such long lasting constipation, and I succeeded to obtain an evacuation in the above mentioned way every third day at least. The menses were three days late and very painful, they were more profuse than formerly and lasted for five days. Since then daily evacuation set in quite spontaneously which no doubt was due to Karlsbrunnen, for there was constipation again, when after a course of 4 weeks I had the mineral water stopped for some days, 2 glasses taken before breakfast were however quite sufficient now. When patient left after having taken 27 baths, the tumor showed only half of its former size, but the uterus was still hard and immoveable. The brine wrappings were continued at home, and by another treatment next summer (23 baths) the tumor was removed entirely. The uterus was still somewhat hard but not so much as before, was moveable to all directions and had an anteverted position, all former troubles had disappeared.

The nature of this tumor appears rather doubtful. If it was sure of having been caused by a miscarriage and if it had not been so excessively hard, it might have been considered a retro-uterine bleeding which was not absorbed and gave the impression of a real tumor. This suggestion is supported by the comparatively rapid success which is not to be expected with organic tumors. At all events there is not denying the fact of the patients sufferings being very bad indeed, the general state of her health had suffered very much, she was in a state of

perfect despair, a long treatment from the hands of one of our first gynaecological authorities, had brought her no relief whatever and so I dare say, I may consider myself fully entitled to call this cure solely obtained by the Nauheim treatment, a brilliant result.

The same which has been said of the exudative processes proceeding from the uterus refers also to the ovaries and tubes. Though in the course of the last twenty years ovariatomy has become one of the greatest triumphs of modern surgery, yet the opinion which I expressed 1870 in the above mentioned essay is still valid: „cysts will be detained in their growth and their volume will decrease after each treatment" (though they will increase again later on). The wife of a colleague of mine with one (or several) ovarian cysts was in the habit of coming to Nauheim every year, the treatment was always followed by a considerable decrease of the tumor, so that an operation, which she had refused to undergo, could in fact be very well dispensed with. She died some years ago at a very old age from the consequence of a fall. Affections at the tubes especially the gonorrhoeal forms which are the main source of a good many troubles, are sometimes very favourably influenced here.

In order to prevent misunderstandings I wish to say that I did not mean to assert, that all the affections which have been enumerated here must be cured or find improvement at least, I only meant to say they can be cured or improved as is shown by numerous cases. On the whole the results, especially when compared with other treatments, are satisfactory, yet nobody knows better than I myself that with many cases, a rational local treatment must either precede or follow the cure

at a watering place, still any local treatment, if not quite necessary for the moment, must be put off whilst the baths are taken.

VI. Chlorosis and Anaemia.

After all I said with regard to scrofula I may confine myself to a few remarks now. With chlorosis of young girls and especially with the form connected with the development our baths carefully applied render good services. Baths with a moderate amount of $C_2 O_4$ with a low temperature (25° R.) and of short duration, four a week, are much to be recommended. With the more severe forms of anaemia, caused by loss of blood or by long illness, or simply called forth by an insufficient formation of the blood, effervescent or current baths prove highly beneficial. I have often had patients with whom neither steel-drugs nor ironwater had ever agreed before and who could bear them quite well simultaneously with a cure in Nauheim. Patients whose condition of blood has to be improved must of course be submitted to a very regular diet; a stay of some hours in the graduation houses every day also is of great value. Instead of the steel waters (Pyrmont, Schwalbach etc.) which I used to prescribe formerly I now order a solution of ferrum dialysaticum 1:4, 15—20—25 drops in a glass of water during or immediately after meals. As the Ludwigsbrunnen a favourite drink at meals, can always be got fresh and as the carbonic acid it contains renders it a fit combination for steel drops this solution is to be preferred to the natural steel water because a bottle of the latter opened at luncheon time becomes flat by the evening.

Apart from these advantages I have found, after having tried all kinds of steel drugs, that ferrum dialysaticum (which is always to be got here in a very superior quality) dissolved in any water containing a small amount of carbonic acid is always well borne. I as a rule consider 150—200 grammes of this solution (1:4) quite sufficient for a treatment of 5—6 weeks; the same quantity may be taken once more or several times more in the course of the year if necessary.

VII. Diseases of the Skin.

The old controversy between doctors in brine-baths and specialists for skin diseases has not yet been decided. The former, one and all report the good results obtained by treatment with brine, the latter won't hear of brine as too strong for the majority of skin diseases. On one side clinical experience — on the other mere theory! How is this controversy to be brought to an end. Experiments alone could lead to a final decision, only if fate was capricious the scales might be turned against us. I say to every person coming here on account of eczema or psoriasis (for these affections are those especially concerned) „Try our baths!" If the disease gets worse by the end of the second week or rather if the change for the worse which has shown itself on the first days has not altered until then, I invariably advise them to break off the treatment.

My statistics have become very voluminous in the course of years but they unfortunately don't give any further information but that the number of patients who have met with a positive success and those with whom

the result has been only negative is almost the same. The number of those however who leave off treatment certainly is far greater than the number of real and permanent recoveries which I have to show off. I have also taken much trouble to find out whether those forms caused by scrofula have a better chance of success then the others but that too I have not been able to prove from my notes, though children suffering from eczema caused by scrofula almost never leave Nauheim without feeling better. With regard to those forms most prevalent in adults however no better prognosis on account of scrofula can be given, whilst those forms combined with chronic articular rheumatism or gout have to show rather a better success; but on the whole I am not able to account in any way either for the failures nor for the strikingly good results obtained with some cases. I suppose the texture of the skin to be of more importance hereby than the constitution of the patients, but could not gain any certainty on that point either. Fair or dark at all events does not make any difference. One observation however which I made at the beginning of my practise already has until now always been confirmed, there is no doubt of patients suffering from skin diseases standing much better the baths containing carbonic acid (spring VII) than the simple brine baths, though one might be inclined to suppose the irritation caused by a bath from $C_2 O_4$ to be less than that of a bath containing the same amount of salt plus carbonic acid. During the last years I have applied our strong effervescent baths in cases of psoriasis and have derived a decidedly good result from them. Now that psoriasis has been proved to be caused by a bacillus there remains the question

whether our thermal brine may be considered as possessing the power of destroying this sperm. The success obtained would then be accounted for and only the failures would be left to be explained. No examinations have as yet been made on that behalf, by another examination however our brine itself has recently been proved to be free from sperms.

Discussing diseases of the skin the so-called bath-pustules must be mentioned. With a good many though by no means with all those taking the baths here, an eruption of the skin (especially on the chest and the stomach) takes place at the beginning of the cure, seldom later on. The pimples vary very much in size, sometimes there are even small furunculi, the eruption however is very seldom accompanied by fever. These pimples which are rather troublesome because they itch and burn a good deal either begin to dry off after 3 or 4 days time or they begin to suppurate. These bath-pustules are of no consequence whatever.

One disease entered in my books every year is furunculosis. Very frequently there is only question of a localization, limited to the axills. In one case the frequent returns of the trouble had caused the skin to become like leather and had called forth a diffuse hardening of the hypodermatic cellular tissue. Every fresh abscess became more painful and no end of poultices were wanted to make them soft and to promote their opening. During treatment here 3 new abscesses formed, afterwards however there was no relapse whatever. Relapses of furunculosis during treatment are quite common, in one case I counted 23 of them during 5 weeks. I have also known cases where some weeks after the treatment fresh furun-

culi appeared but with a good many cases the tendency to their formation completely disappears under the influence of treatment in Nauheim.

With three different patients carbuncles appeared during treatment here. They were treated surgically and all of them healed very well, though one of them (in the neck) seriously endangered the life of the patient. In each single case the baths of course were blamed as being the direct cause, but as I have had under treatment more than 10,000 patients and yet out of this number have to state only three cases of carbuncles, the effect of the baths does not appear dangerous that way. On the other hand a good many patients have at times been sent here who had been suffering from carbuncles before and with whom a hardening of the hypodermatic cellular tissue remained causing pains by pressing upon the nerves or restricting the power of motion. The general state of health of all these patients was very low indeed but all derived a highly beneficial effect from treatment (baths and massage) here.

The most remarkable case of recovery (!) from psoriasis universalis I have had a chance of witnessing here with a gentleman of about 70 years of age. Patient had been suffering from the disease for the last 52 years, he had tried all possible cures but derived only a transient relief from them. In summer 1866 he by chance came here accompanying his daughter who intended to take the baths, but not thinking of any treatment for himself. He had gone through so many different cures, some of them very painful too, he had been using jodine, arsenic etc. but all in vain and thus after so many failures he had quite given up to try any more treatment

or to struggle against a disease, which he had been suffering from ever since he was 18 years old. The whole body, the head and the face included, were covered with scurf, a slight touch of the skin only caused a shower of scurf to fall down, notwithstanding a very frequent use of the brush his collar and his coat were continually covered with it. His hands were in such a condition so as to compel him to wear always gloves. Syphilis was out of the question and there was no sign of any hereditary disease either. Patient at the time only applied some indifferent ointments or oil to keep the skin soft. Telling him that a similar case of psoriasis universalis had been cured here by one single course of baths only (with a woman in the Kurhospital 1868) I at last persuaded him to undergo treatment here. I first prescribed natural thermal baths from spring VII mixed half with fresh water, temperature 26° R. The baths were gradually made stronger and after the 8th bath pure thermal brine was used. It seemed very strange that patient evinced a pleasant sensation whilst in the bath and for some time after whilst other baths always gave him pains besides being followed by a feeling of increased dryness of the skin afterwards. The pale, grayish colour of the skin soon changed into a more healthy looking reddish shade, the formation of scurf decreased every day, gradually spots of healthy epidermis showed, they grew and six weeks later patient left with his skin almost entirely cured. His head and his face were quite free from scurf. Last summer patient came here again looking fresh and well. The small residues left after treatment last year had disappeared soon after, patient had spent an excellent

winter and now came to take another course of thermal baths only in order to maintain the good result.

With another case of psoriasis punctatis (non specifica) in a young man of about 27 years of age there was the same good result. With him the disease was also spread over the whole body but thus as to form separate spots of about $^2/_3$ of an inch in diameter at intervals of 5—3 inches. There also was an entire recovery and I know for certain that until the following year there had been no relapse.

In cases of chronic eczem, the dry as well as the wet, according to my statistics our baths most frequently are not well borne. The swelling increases, the diseased skin becomes redder than usual, is very painful, looks cracked and torn and is liable to bleeding. As soon as these symptoms show I at once advise the treatment to be broken off, knowing by experience that to continue it is only of evil consequence for the patient.

VIII. Rheumatism.

a. The chronic muscular rheumatism is much more seldom treated in Nauheim than the chronic articular rheumatism in some cases however both the forms appear simultaneously. With muscular rheumatism the pains very frequently increase or reappear — a symptom which the non-medical are inclined to consider favourable, which however do not in the least influence the prognosis and only show that there are still „rheumatic layers“ which under favourable circumstances (during summer) don't cause any pain but only wait for a chance to reappear.

The stimulation of the skin, as caused by the bath and which though not proved scientifically cannot be denied, offers no doubt such a chance. This increase of pains, which only very seldom sets in more than once during the cure lasts as a rule but for about 3—4 days, only in two cases I have noticed a real relapse during treatment. I as a rule prescribe the natural thermal baths, the good effect of which is aided by massage and very often I prescribe a drinking cure — Ludwigsbrunnen and Kurbrunnen mixed — at the same time. The success mostly is highly satisfactory at the time but I from my own experience cannot answer for complete recovery because by a strange coincidence or by chance none of the patients treated from muscular rheumatism during the last 21 years has ever come back here. The form most commonly coming under treatment here is rheumatism of the lumber muscles, next to it that of the intercostal muscles, rheumatism of the muscles of the shoulders, of the face and of the extremities.

b. Chronic articular rheumatism which often is said to have appeared after an attack of acute articular rheumatism but which often also is said to have appeared without it, this same chronic articular rheumatism has got nothing in common with acute articular rheumatism but the name. Acute articular rheumatism either is an infectious illness or an acute feverish condition based upon „injury of the nerves." Only a very few cases of acute articular rheumatism can really be proved to have been caused by a so-called cold or chill whilst this exactly very often is the case with chronic articular rheumatism.

Formerly chronic articular rheumatism as a rule was considered to be mostly a disease of the lower classes.

This however is not correct as proved by the great number of cases of chronic articular rheumatism coming under treatment in watering places. Another assertion says women to be more liable to this disease than men, this however I am also able to contradict from my tables which show under this column 63,3 percent of men and only 31,3 of women.

There are with regard to their etiology 3 principal forms of chronic articular rheumatism.

a. chronic infiltrations of the joints caused by acute articular rheumatism;
b. rheumatic inflammation of the joints, originally acute but having become chronic;
c. painfull swellings of the joints bearing from the beginning a chronic character.

Various as chronic articular rheumatism is as to its etiology so these different forms are various as to their intensity. They however all from the painful swelling of the joints to the deforming rheumatic swelling of the joints known as Arthritis nodosa present the same process of infiltration of the synovialis and the periarticular infiltrations of the tissues which hinder the free movement of the joints. It need not be discussed here whether rheumatism is caused by an oversaturation of the blood with uric acid or whether it is called forth by other irregularities in the formation of the blood, it seems sufficient that since the existence of the baths it has been stated with the help of observation and practical experience that also with rheumatic infiltrations or exudations great benefit is derived from the resorbent effect of our baths. With these forms massage and gymnastics are a great help. I have thus succeeded, by employing much force

to gradually free the joints of a russian gentleman whose right shoulder was immoveable with complete anchylosis and to give him back the full use of his arm. In this case, apart from the thermal baths, strong douches of warm brine were applied and also compresses of brine during the night.

Even with the worst form, the deforming inflammation of the joints very good results have been obtained here, though with cases of long duration there is no hope of recovery to be found here nor of the deformities to become less though the baths seldom fail to relieve the intense pain.

Mrs. N. a farmer's wife had formerly always been in good health. There was no hereditary rheumatism yet she had been suffering for the last two years from a rapidly increasing deforming inflammation of the joints, from uterine infarctions and from profuse fluor albus. Her hands and her fingers, her ankles and her toes all showed the characteristic swelling. The fingers had that peculiar gable-like bent, which made anchylosis seem to be complete. Entire disability of walking, knitting etc. Patient went through treatment in Nauheim three times (baths, compresses of brine, massage) and is now able to walk again and to do all kinds of needle-work, sewing etc. The uterine disease has been removed entirely.

Another lady who had been suffering for many years from a slowly progressing deforming inflammation of the joints — literally speaking all the limbs of her whole body being affected — went through treatment here repeatedly and got so much better as to be able to take a quarter of an hour's walk and to use her hands freely. Unfortunately patient feeling so much better was not as careful as she ought to have been and staying out too late in the cool autumnal air, got a relapse which of course caused renewed pains and new swellings of the joints. I hope however another course of baths next year will bring back the same satisfactory state of health she enjoyed last year.

Treating chronic rheumatism I like to begin first with warm baths of 28° R. but have the temperature lowered gradually as much as possible, a method which not only has a good influence upon the cure itself but certainly also contributes to invigorate the skin. It is a great mistake however to attempt too much in the latter direction and to try a regular cold-water-cure during the treatment. Cold baths very often have caused relapses and I therefore restrict myself to apply cool baths only, leaving the really cold ones to be applied during the after-treatment.

IX. Gout.

Gout as far as designing by this term only Arthritis proper, distinguishing it thus from the so-called Arthritis nodosa, the deforming inflammation of the joints (commonly called gout of the joints) may be considered fairly as a disease of the upper classes. Gout is a constitutional disease and may be called acute serous synovitis, principally attacking people who on account of a too slow assimilation of food suffer from plethora and mostly from simultaneous synchronimous interstitial nephritis. It is characteristic and quite indispensable as to the diagnosis of gout that after patient having suffered from constipation and from urine replete with sediments for some time, a sudden attack of gout, combined with high fever sets in during the night. In most cases the joint of the big toe between metatarsus and phalange is very much swollen, the skin is shining and the pains are very violent especially upon touching the diseased joint. These symptoms get less in the morning but only to reappear in their full force again at night; the attack thus lasts from 5—10 days

and then disappears. Sometimes, but very rarely though, this first attack remains the only one, as a rule these attacks however set in at either longer or shorter intervals until finally a chronic gouty condition is established: the articular swellings which gradually also extend to the other joints of the extremities retain their peculiar pastous condition forming the so-called tophi and the various dilatations of the vessels. Very frequently the disease makes so unfortunate a progress as to bring about a complete anchylosis of the diseased joints which remain intensely painful as to touch. With very bad and long lasting cases the danger of an atheromatous degeneration and the degeneration of the cardiac muscle becomes imminent.

Gout is a uric acid diathesis that is to say the blood of those suffering from gout contains an excess of urates, either in consequence of an increased formation of uric acid or of a diminished secretion of the originally normal quantity of uric acid, thus depositing urates in the cartilages of the joints, in the synovial cavities of the tendons, in the ligaments, in the cover of the tendons and in the periosteum.

To this description of Arthritis proper, the proper gout, I have to add from my own observations that with regard to heredity my statistics prove a proportion of 43,8 percent (28,6 male and 15,2 female) the age of men suffering from gout, varying from 35—50 that of women from 40—65.

In treating patients suffering from gout I endeavour:

1. to stimulate by baths and by drinking-treatment the change of substance in order to thus remove the surplus of uric acid;

2. to prevent the formation of a surplus of uric acid by appropriate dietetic measures and by gymnastics (a good deal of walking, the so-called indoor-gymnastics and massage);
3. to remove the occasional cause of the single attack (a chill or cold) by stimulating the cutaneous action and thus invigorating the skin itself.

I have experienced real good, lasting results from a combination of a Wiesbaden and a Nauheim treatment. First three weeks at Wiesbaden and afterwards three at Nauheim (without any considerable interval though). At the beginning of the treatment baths of 30° R. are highly to be recommended, so high a temperature however not being so well borne in Nauheim as in Wiesbaden. The Kochbrunnen in Wiesbaden also is excellent for drinking purposes the majority of gouty people suffering at the same time from gastric troubles, for which our own cooler drinking-springs containing $C_2 O_4$ appear indicated only later on. When a patient in Wiesbaden has had the temperature of his baths gradually lowered to 27° R. he also can stand very well our natural thermal baths of 26—25° R., the carbonic acid as contained in our baths permits of an even lower temperature (24—23° R.) which is a great advantage with the regard to the intended invigoration of the skin. According to my own experience I am bound to acknowledge the baths in Wiesbaden to be more effective with the solution of gouty layers (especially in inveterate cases) than the Nauheim baths but I have also found that a long continued cure at Wiesbaden is apt to have a relaxing effect especially upon the heart. A prolonged application of the higher temperature of the Wiesbaden waters may also be likely to produce a certain

weakness of the cutaneous functions thus causing fresh chills and calling forth repeated acute attacks. It is for this reason that according to my own opinion, gout indicates a combination of both these treatments, though I do not by any means deny that the Wiesbaden baths alone may grant quite as good a result as does a Nauheim cure by itself, but it is the combination of both which according to my experience offers the best success. In cases where only Nauheim treatment is to be applied I make the patient begin his cure with thermal baths of short duration and a temperature of 28—27° R. being careful as to lower the temperature very gradually only. It is not seldom of a fresh attack of gout to set in after about 10—15 baths have been taken, I even take care to tell so each new patient at the beginning of the treatment. Simultaneously with the bath a drinking cure is applied, I invariably prescribe an equal mixture of the Kur- and the Ludwigsbrunnen to be taken in as large doses as possible, warmed at the beginning, later on however in its own natural temperature, in order to allow the C_2O_4 to have its full effect. Besides this mixture which is to be taken at regular hours, the patient is ordered to drink during the rest of the day pure Ludwigsbrunnen in large quantities. Of greatest importance, very difficult however in their execution on account of the habit of table d'hôte-dinners, are the dietetic prescriptions which intend to exclude as much as possible all nitrogenous food, especially beer whilst a small quantity of pure white wine may be permitted.

In cases where the ability of walking is not limited I order long walks to be taken advising the patient however to walk slowly and to rest frequently in order to

avoid any excess of fatique which else might interfere with the effect of the baths. With regard to massage it always appears advisable not to touch the big toe nor either of the other affected joints else a new acute attack might be caused; a general massage of the whole body however is without any danger and mostly has a good effect.

Great benefit is derived from the local application of brine compresses during the night. One of my patients, now 77 years of age, was suffering 8 years ago from a severe acute attack of gout in consequence of a cold caught on a railway journey in January. The very painful swelling of the metatarso-phalangeal-joint lasted until March. Already at the end of April he underwent treatment here which he since has repeated every year without ever having suffered from a second attack. There is no denying the fact that in treating gout the drinking cure besides the baths is taking a very prominent part; England, the country where gout is most prevalent, is sending a good number of patients to Homburg every year and most of them derive much benefit from the Elisabethenbrunnen there. The Karlsbad waters which formerly were thought of very highly with regard to gout, have met with a good many failures and it has since become the rule to send to Karlsbad only such gouty persons who have a good deal of resistant power left and whose digestion is good, whilst those patients that have been weakened by a long duration of the illness and with whom the assimilation of food appears unsatisfactory are sure to be more benefitted by treatment in either Wiesbaden, Homburg or Nauheim.

The preceding chapters: Heart-diseases, diseases of the spinal marrow and of the nerves, scrofula, ricket,

uterine diseases and pelvic exudations, skin diseases, chronic muscular and articular rheumatism and gout represent the indications which, according to my statistics, most frequently require a Nauheim treatment without however putting down thereby a fixed limit to the indications themselves. Discussing the diseases of the heart I have mentioned that there is scarcely any form of chronic hearts disease which has not come under my treatment here, though I might say as well there is hardly any chronic disease at all which I have not treated here. Yet I do not by any means intend to enumerate diabetes for instance amongst the indications for Nauheim just because I by chance have been treating here some patients suffering from that disease. The very nature of our baths and the effect they produce tend to strengthen the action of the heart, to stimulate the circulation of the blood, to remove venous stases, to bring about the resorption of exudations, to stimulate diurese and the functions of the skin, in short to promote and to stimulate the change of substance in the diseased body, thus proving the indications to be by no means limited as in a good many other watering-places but rather very extensive. I do not hesitate to formally state here this opinion of mine though I know perfectly well I am running the risk of being misjudged and to be counted by superficial or ill-disposed readers amongst the number of those doctors who only praise their own watering-place as the true paradise for all sufferers. At the other hand I however am convinced of every impartial observer admitting the correctness of my statement. In reporting about the different cases with which some striking success has been obtained I have

been careful not to say one word more but what I am able to prove and to answer for at any time.

I might finish this essay here by just pointing out that there are many other affections well suited for treatment in Nauheim. Yet I particularly wish to draw the attention of my collegues to at least some of these diseases with which treatment here, according to my experience, produces quite as good an effect as with those mentioned before, though they are not generally known as being indications for Nauheim. I separate those forms where only the baths are applied from those with which both the baths and the drinking-cure bring about the desired effect.

X. General Debility

as following severe acute diseases or caused by anaemia or by cachetic conditious is very much benefitted by a cure in Nauheim. Natural thermal baths and later on effervescent as well as effervescent-current baths of short duration, of a rather warm temperature at the beginning (27° R.) but being lowered gradually (24° R.) and with frequent days of rest between the different baths are to be used. Their good effect is very much assisted by a stay of some hours in the graduation houses every day or in the park which affords so pleasant a shade and so many a nice walk. I have experienced some very good results especially with general debility after typhus and after heavy loss of blood as also three times in cases of a very far advanced cachexia following long lasting fever, acquired in India in two of the cases, and in Egypt with one of them. In one of the cases of a man 43 years old and who out in India had been suffering almost con-

tinually from fever for the last 7 years and who had come to Nauheim straight after arriving in Europe, a big tumor of the spleen and a bronze coloured icterus became almost normal in size in course of 6 weeks here, the swelling of the liver however remaining the same. Very often I have been treating women here who after a bad delivery and without suffering from actual disease couldn't rally strength. They too derived much benefit from their stay here, though with these cases only a few baths (3 a week) containing C_2O_4 in large quantities as a rule are taken, the good result owing principally to the invigorating air at the graduation houses, to the excellent milk and the influence of a healthy and quiet residence in general. Nauheim is none of the fashionable watering places where ladies are obliged to „dress" nor is the town itself so small as to make everybody be known and be bothered by others, the Nauheim Kurpark is so extensive and affords so many quiet lovely places that the patients may spend the whole day out of doors without being obliged to be with others. It is for that reason that Nauheim is liked so much by ladies also who in consequence of trying social duties in winter feel tired and worn out without being actually „ill".

XI. Diseases of the Bones and of the Periosteum

are mostly part of scrofula though I have met with a good many cases too which in no way were connected with this disease. I have often seen carious-necrotic affections of the large bones especially in young people. With most of these cases a surgical treatment is unavoidable in order to bring about full recovery, yet there

are many cases too with which time has not yet come for an operation to take place (Sequester-operation for instance), or others where it has been gone through. With all of them treatment here offers a most excellent effect upon the general state of health of the sufferers whose strength mostly is very much reduced by the long lasting suppuration. I frequently meet with cases of periostitis (perhaps rheumatica?) and with some of them I believe to have succeeded in putting a stop to the further progress of the disease. I have treated a young man suffering from periostitis of the upper part of the thigh (epiphysis being quite normal) with baths and local brine compresses for three years and have succeeded to entirely remove the disease. I also obtained very good success with periostitis tibiae and periostitis of the metatarsal bones. With cases of long lasting suppuration as well as after severe operations our baths are rendering most excellent services. The most remarkable case of that kind was that of an american boy whose hip-joint had been excised by Professor Wilms. Suppuration was so profuse even 3 months after the operation had taken place, that the little patient, who was being transported on a mattress with an extension-apparatus had to have his wounds dressed three times a day. In the cut from the operation which was very large and had healed very badly there were 4 suppurating channels. Contra-openings and two more operations had not been able to stop suppuration. The poor boy was frightfully emaciated, looking like a skeleton, he was anaemic in the highest degree and so weak that the slightest movement caused him pains. The whole part round the hip-joint was very much inflamed, and oedematous and the whole leg felt

so intensely painful that at the beginning of the treatment I had to lift myself the little patient into his bath. Wilms who at this time happened to be here with his family for the cure, told me he had but little hope to preserve the life of the poor young sufferer whose strength was almost completely exhausted. He however had a chance of convincing himself already during the time of his own stay of the brilliant success of the treatment here. Twelve weeks after the patients coming here all the fistulae were healed and thus the suppuration stopped. The little boy had a very good appetite, his complexion looked fresh and healthy, he was able to sit upright and to move his leg spontaneously. In the following year in March I happened to see my little patient again in Berlin. Wilms had had a Taylor-apparatus made for him and the boy thus was able to walk about without the slightest difficulty and with the defect being scarcely visible.

A good number of those too, who had been wounded during the war 1870 and who had been operated upon by me at the end of August and the beginning of September in the hospital here, were very much benefitted by the use of our baths next spring. Several of them with whom large parts of the joints had heen removed and whose wounds, notwithstanding all surgical measures, were healing but very badly all the winter through and whose strength was very much exhausted in consequence of the long lasting suppuration, experienced an excellent success from our baths too next spring, their wounds healing promptly.

XII. Exudations of serous skins and exudations of the joints.

There are a good many of these cases every year. The excellent effect of our baths upon exudations has already been mentioned when treating diseases of the heart, of the spinal marrow and of women, so these forms may be passed over here. It is especially the beneficial effect of the Nauheim treatment with pleural exudations I wish to draw attention to, all the more as the majority of physicians scarcely think of Nauheim in those cases. I have had under treatment here both pleural affections in consequence of old tuberculous processes and exudations after an acute inflammation, the lungs being intact, exudations which had been removed to a certain degree but which then for a time had resisted to all measures. The good success of a Nauheim treatment may be demonstrated by the following case, the case of a well-known colleague from Berlin. This gentleman then about 30 years old had been suffering during the winter from pleurisy the exudations of which extended up to the shoulder blade. In spring he brought his family here and introducing them to me expressed his regret at having to leave them being obliged as he said to go to Ems. I asked leave to examine him and finding but little fluid exudation in the lower part and a considerable swelling of the pleura up to the shoulder blade, I earnestly advised him to try Nauheim. He really remained, took thermal baths and applied during the night brine compresses to the side of the thorax which was affected. The number of baths amounted to 23 only, he also drank wheys or Kurbrunnen

mixed with Ludwigsbrunnen alternately. In August patient returned to Berlin and immediately began attending his very large practise again. On New-Year's day I got a letter from him in which he wrote: „I am running about like a weasel, I can climb like a sailor (alluding to ascending stairs which had caused him dyspnoë when he first came here) and I am drinking like a student.“ So he had recovered entirely after a treatment of only 5 weeks, and in spite of the many fatigues of his profession he has remained perfectly strong and healthy and free from any relapse for the whole of the 10 years which have elapsed since.

The so-called hydrarthorus genu on one side as well as on both has come under my treatment here frequently and I always have found the baths and compresses of brine very effective with it. The same treatment has rendered excellent services in cases of intraarticular fluids. There have been of late a good many patients here with whom exudations had already been removed by the trocar. They are sent here either to prevent a relapse or because the evacuation has not been complete or often too because there is a tendency of the exudation to reform again. With all these cases I prefer brine compresses to be applied instead of massage, having frequently noticed massage to be followed by an inflammation of the larger joints. On this occasion I have to say that whenever I prescribe massage it is always applied by persons trained by Professor von Mosengeil in Bonn and that I in every single case give the most minute orders about method strength and length of time; no changes being allowed to be made herein without my special leave, the whole treatment thus being under my own strict control.

General hints on the drinking treatment.

Before enumerating the various other indications I mean to give a short sketch as to the effect of our mineral springs. I have to refer only briefly to the Ludwigsbrunnen which by the slight amount of mineral parts and the C_2O_4 it contains and thanks to its pleasant taste proves to be an excellent dietetic drink but is else chiefly taken when mixed with wheys or with the two salty springs the Kurbrunnen and the Karlsbrunnen.

The Kurbrunnen used to be formerly the weaker spring when compared with the much stronger Salzbrunnen which about 30 years ago has discredited Nauheim so much on account of its very drastic effect but which now is fortunately exhausted. It was then also that patients suffering from habitual constipation, from hemorrhoids etc. used to take 3—5 glasses of Kurbrunnen a day and whenever the desired effect didn't show rapidly enough infusions of senna-leaves and other purgatives were applied. Such patients as a rule felt quite well as long as the treatment and the permanent stimulation of the bowels produced by it lasted, but as soon as they returned home the old complaint became worse than it had been before and the means applied formerly failed to give relief now. Very often also catarrhs of the stomach and the bowels were called forth by the treatment itself and thus a strong prejudice arose against the Nauheim drinking-cure. It is Beneke to whom we are indebted for having reformed matters in that way. We now know that in cases where a concentrated solution of chloride of sodium has a rather obstructive effect an attenuated one proves highly beneficial and we also know that with

cases of habitual constipation there is nothing worse than the continued use of mineral drastics in a concentrated form. Beneke prescribed the Kurbrunnen to be tempered with fresh or with Schwalheim water (an iron-chalybeate spring in the neighbourhood of Nauheim) whilst I first had the dilution with Ludwigsbrunnen used. It was a most valuable addition when 1870 the Karlsbrunnen was found,*) a water which in 1000 parts contains 12,4 solid component parts with 9,8 chloride of sodium and 1,4 $C_2 O_4$.

In its effect the Karlsquelle keeps the medium between the Homburg Elisabethenbrunnen (13,9) and the Kissingen Ragoczy (8,5) and a mixture of Kur- and Ludwigsbrunnen, containing about the same amount of salt, have proved to be excellent mineral waters the importance of which is by no means sufficiently valued, Nauheim always being considered a bathing place only.

The effect of these waters taken before breakfast in 2—3 doses of 150—200 grammes (5—7 ounces) consists in stimulating the secretion of the salivary glands and the action of the stomach,**) such as Deetz***) has proved it with regard to the Elisabethenbrunnen in Homburg. The secretion of pepsine and of hydrochloric acid from the mucous membranes of the stomach is increased and with it the resorbent capacity of the stomach itself. The alcoholic fermentation, the decomposition of sugar into alcohol and $C_2 O_4$ is promoted. These waters besides

*) cp. Deutsche Klinik 1870, No. 27. Remarks on a new spring (Karlsquelle by Dr. Bode jun.)

**) The waters have a temperature of 21° and 15° C. but may be warmed in the drinking hall.

***) Homburg vor der Höhe by Dr. W. Deetz. 2nd edition. Wiesbaden 1888. (J. F. Bergmann).

have a stimulating effect upon the peristaltic of the bowels causing a more profuse secretion of fluids on the mucous membranes of the bowels. Thus the diluted form as showing in the evacuation is not so much a consequence of the solution of salt introduced into the body but rather a consequence of the increased secretion of the mucous membranes, a more general draining of the tissues being thus obtained. The dark colour of the copious evacuation as noticed at the beginning of the treatment infers an increased secretion of the bile and this again points to obstructions of the portvein-system being removed by a stimulation of the action of the liver. At all events the secretion of C_2O_4 in the lungs is increased and thus a reduction of the tension of C_2O_4 in the body is produced (according to Deetz l. c.) His inquiries into the effect of the Elisabethenbrunnen together with the examinations of Beneke with regard to the effect of the Nauheim Kurbrunnen have proved an increase of urea in the discharged urine and after a continued use a decrease of the uric acid to take place. It must be mentioned here that contradictory to the theory of Oertel: of an increased use of liquids producing under certain conditions a decrease of the amount of urine discharged; after the use of our waters an increase of urine takes place (in some cases $^1/_3$ more than the quantity of Kur- or Karlsbrunnen taken by the patient). This increase of urine which under normal conditions never fails to set in, as a rule comes to a stop in the beginning of the second week of the treatment but appears again as soon as 3 glasses instead of 2 are taken or if patient in the course of the afternoon (between 5—6) as I like to prescribe, drinks 1—2 glasses more.

Thus the Nauheim drinking treatment increases the secretion of the mucous membranes, of the oesophagus, the stomach and the bowels, its continued use promoting an increase of the whole change of substance.

It has already been mentioned before that with some forms of diseases of women, with scrofula, rheumatism and gout drinking treatments are required to assist the effect of the baths. It has been taken care that Mr. Ph. J. Weiss always keeps a good stock of all foreign mineral waters in the western pavilion of the drinking hall where also milk and whey are to be had. The drinking treatments however being most extensively used with cases of chronic catarrhs.

XIII. Catarrh of the Nose and the Throat,

frequently occurs with children and young people connected with scrofula whilst with grown-up people it appears more frequently as an altogether independant often very obdurate and very trying complaint. The slightest form is when with any cold or other irritation (dust, strong smells etc.) a diffuse swelling of the mucous membranes of the nose takes place which very often becomes chronic and is apt to cause formations of polypous growths whilst the severe form of inflammation is being characterized by a purulent fetid secretion. I often have observed the latter form as a combination to severe cases of chlorosis. They were the most obdurate cases with which even a total scraping of the cavities of the nose and throat had brought but a temporary relief. Two of these cases cured in Nauheim prove them to be much more of a constitutional but of a local affection; the disease was entirely

removed by the baths and the drinking cure here for the local treatment applied at the same time was of hardly any moment at all when compared to those treatments which had in vain been applied before. The treatment here chiefly consists in baths, the temperature of which is lowered gradually, in drinking Karlsbrunnen (sometimes also a mixture of Kurbrunnen and whey) and in local douches of Kurbrunnen. The inhalation-rooms are provided with all the best apparatuses required for this purpose. With those cases with which a more energetic treatment appeared indispensable I have found chlorid of Zinc to render excellent services. I always apply it according to the method of Prof. Roser by touching the ulcers with small balls of cotton steeped in a concentrated solution of Zinc-chlorat-fus.

Patients suffering from these catarrhs and especially also those subjected to chronic bronchitis (treated in the next chapter) have first been sent here by Traube. Only one year before he died he told me how very well satisfied he was with the results obtained, at the same time complaining of how difficult it was to overcome deep-rooted prejudices. He said whenever he was advising a patient to go to Nauheim he was asked invariably „Why not to Ems?“ He then added: „Of all bathing places I know, Nauheim is the very best situated having the fewest contra-indications.

XIV. Chronic Catarrhs of the Larynx, Trachea and Bronchi.

The bacteriological examination of the sputa is of too recent a date as to decide the question of how many

of these affections are connected with tuberculosis. During the last two years I, with all cases where tuberculosis was to be supposed (5), have made the examination and shall continue to do so in order to settle the question of how the bacillus tuberculosis may be influenced by the cure here. With some cases of chronic catarrhs of the larynx as well as those of the apex there was no doubt of the affection being combined with tuberculosis, these cases however are coming but very seldom under treatment here and though the result at the time was very favourable, I will not refer to them but confine myself to the chronic catarrhs not combined with tuberculosis. These without any exception are deriving great benefit from the treatment. 3—4 baths per week; drinking treatments of either Kur- and Ludwigsbrunnen mixed or whey and Ludwigsbrunnen, a frequent and prolonged stay in the inhalation-room and in the graduation-houses, long walks in the woods, an appropriate diet and, in cases of laryngeal and tracheal catarrhs, inhalations with Kurbrunnen are prescribed.

XV. Chronic Catarrhs of the Stomach and of the Bowels.

From all what already has been said of the effect of saline waters it becomes evident of our drinking treatments being especially beneficial with catarrhs of the mucous membranes. This however is but very little known for every year it happens that ladies under treatment here tell me their husbands would have so liked to accompany them here unfortunately however it had been necessary for them to go to Kissingen or some other such

place on account of a catarrh of the stomach or the bowels. I repeat it here: our springs are keeping exactly the medium between Homburg (Elisabethenbrunnen and Kissingen (Ragoczy) and rationally applied offer the same chances of a good success. As to a higher degree of irritability of the mucous membrane which contra-indicates the C_2O_4 of our springs the warmed Kurbrunnen is of much use, I have found even in cases of acute gastric catarrhs our warmed Kurbrunnen to be a decidedly beneficial remedy.

There are among the patients here a good many who formerly used to be habitual customers of Karlsbad and who after only coming here for some other indications or in order to accompany their family found the result of their drinking treatment here so satisfactory as to induce them to altogether give up Karlsbad for Nauheim. Physicians too who have experienced the same good success have continued to send other similar cases here and have spoken very highly indeed of the excellent results obtained here — on the whole however these indications are not generally known.

If at the beginning of the treatment the mucous membranes of the stomach are covered by rather large quantities of mucus I have the stomach well „washed“ with lukewarm water before beginning the treatment, a method from which I have experienced much benefit to be derived. In the course of the treatment a washing too sometimes becomes necessary. I have had amongst my patients people suffering from carcinoma of the stomach (they were mostly people from the neighbourhood) and I with them have witnessed very good results from the use of diluted Kurbrunnen and Karlsbrunnen. With cases of catarrh of

the stomach I prescribe the water to be taken before breakfast in intervals of 15—20 minutes. With those cases too it appears necessary for the patients to walk slowly whilst drinking, the water then agreeing better with them, whilst with an otherwise healthy stomach (in cases of uterine diseases for instance) the want of motion in no way interferes with the good effect of the water. It is to be understood that with those patients an appropriate diet is a condition sine qua non and that it is not advisable for them to partake of the table d'hôte at hotels but that they have better take their meals in one of our many restaurants where they can have the food suited for them, in boarding houses too the wants of such patients are very well provided for. Unfortunately with most of the patients the foolish idea still prevails of the saline mineral springs to have a purgative effect and I am daily told by some patient or other „the water has no effect." Thus it frequently happens that in cases in which I prescribed a mixture of both the mineral springs, 1—2 glasses of pure Kurbrunnen are taken besides, in order to produce this supposed wanting effect. This is a great mistake for as the Kurbrunnen, as experience has shown, is apt to call forth a gastric catarrh in an otherwise healthy stomach, so any existing affection of this kind is sure to be made worse. If there really is an obdurate constipation, as is often the case with gastric catarrhs, it must be removed by the help of other means. I mostly for this purpose have applied clysters with water from the Kurbrunnen, which I have before exposed to the air in an open vessel for some time in order to allow the free C_2O_4 to escape which otherwise might be of bad effect. I sometimes also

have other purgatives applied but never any large doses of a concentrated solution of salt.

In cases of chronic catarrhs of the bowels combined with a tendency to diarrhoea large doses of water taken before breakfast are very often not well borne. I therefore prescribe the same amount of water to be taken in smaller doses in the course of the day (60—75—100 ccm = 1 1/2—2—3 ounces to be taken every 2 or 3 hours) but always before meals. This method has proved to be so highly beneficial that I now apply it also in cases of gout. With catarrhal affections I have been for years in the habit of prescribing Ludwigsbrunnen to be taken all day long.

XVI. Plethora of the abdomen, chronic Infarctions of the Liver and Hemorrhoids,

also belong to the number of those affections with which a drinking cure applied simultaneously with the baths is having a good success. The beneficial effect is brought about the same way as also with the diseases mentioned above, that is by a direct stimulation of the action of the stomach and of the bowels as well as an increase of circulation and of the entire change of substance, all of them moments of the highest importance and which never fail to be brought about by a treatment in Nauheim.

I have not as yet been able to make sufficient personal observations with regard to the grape-cure which however is only important with the diseases mentioned last. The vineyards of Mr. Loeffler have been opened for that purpose for the last two years only. At all events the most high flown expectations concerning these

vineyards, all of them situated on the Johannisberg, have been surpassed by far not so much as to the quantity produced but rather as to the quality of the grapes themselves. The early kinds were already perfectly ripe by the end of September or the beginning of October and as the visitors are allowed the privilege of choosing the grapes themselves, a favour granted nowhere else, this new indication will have to be added for the future to the many others already existing and it may prove all the more an attraction to the place here, as Nauheim for the northern part of Germany is not only the nearest but, as far as comfort and other advantages are concerned, certainly none of the worst places to be chosen for a temporary residence.

The temperature of Nauheim of which for the last 40 years the most careful observations have been made and notes put down regularly three times a day (at 7 a. m. at 2 and at 10 p. m.) by my father shows the following average (Reaumur)

January	+ 0,11	July	+ 15,26
February	+ 1,46	August	+ 14,85
March	+ 3,71	September	+ 12,12
April	+ 7,81	October	+ 7,85
May	+ 11,17	November	+ 3,65
June	+ 14,06	December	+ 0,93

Thus 7,78 proves to be the average temperature of the year. This table, helping to form a judgment as to our climate, strongly contradicts the much spread tale of the great heat in Nauheim. The hottest month shows in 40 years an average temperature of 15,26° R. only

and the slight difference from June to August (1,20 and 0,41) prove the summer temperature to be very even too. The table before me, giving the monthly average of the different years, shows the hottest temperature in summer to have been 17,69° R. (August 1857) and the coldest 11,82 (June 1869). At the time when our splendid park was only being laid out the visitors of our place may have found it somewhat hot, for at this time it is true the road from the lodging-houses in town to the bathing establishments or the station didn't afford any shade at all and it is from this time that the tale of the great heat here first originated. Now however the long spendid avenues forming a leafy roof, offer so deep a shade and such a refreshing coolness as only few of the watering-places of the middle part of the Rhine or rather in the whole of Germany can boast of. The park in Nauheim, this delightful master piece of the celebrated H. Siessmayer in Francfort, is so very extensive, new grounds having only now been opened at the new bathing establishment and the new graduation house, as to richly compensate for the but moderate number of places of excursion in the neighbourhood, though these too are sure to perfectly satisfy those who come here with not too high flown expectations.

The following list shows the number of persons as put down in the visitors list of the different years ss well as the number of baths given in these same years. The number of baths given alone offers a true estimation as to the number of those who come here for the sake of their health, for the visitors list of course includes also the names of those who stay here either on a but temporary visit or to accompany the invalids. Since

1880 the number of baths given either at half-price (60 Pf.) or gratis have been put down in the list under a separate head. It must be mentioned here that in order to obtain free baths, an application to the ministery of finances of the Grand-Duke of Hessen in Darmstadt is required and that the chairman of the bathing-committee here is authorized to grant the permission for baths at a reduced prize. With the permit of free baths or those at 60 Pf. (6 d) there is connected either a complete exemption from the usual fees or a reduction to 3 sh.

Year.	Visitors list.	Baths taken.	Number of free baths and of those at reduced price.
1870	3112	26611	—
1871	5249	56664	—
1872	5354	55749	—
1873	4392	53541	—
1874	4152	51411	—
1875	4479	53118	—
1876	4004	49906	—
1877	3602	45826	—
1878	3876	47969	—
1879	3870	47479	—
1880	4495	53355	5949
1881	4275	50402	4962
1882	4556	55149	5325
1883	4491	58589	7009
1884	5154	68092	6418
1885	5248	71545	7449
1886	5774	85632	6620
1887	6900	95020	6044

The year 1870 with which the list begins can hardly be counted being the year of the great war. In autumn 1872 gambling was abolished, an event which as the list

shows was of much more influence as to the number of visitors than to that of the baths. From 1873—1881 incl: the number of baths in each year remained almost the same, the difference between the highest number (1873 with 53541 baths) and the lowest (1877 with 45826) amounting to 7700 baths only. Since 1881 the number of baths has been steadily increasing from 1885—1886 by 14000 and from 1886—1887 by 10000. We are however far from letting these numbers call forth any exaggerated hopes, we only hope the results obtained to attract more and more the attention of medical men and to win their good opinion for our baths.

Our government which by granting free baths tries in the most liberal way to enable also the poor to enjoy the benefits of the baths, is quite as ready to comply with all reasonable claims, being always anxious to preserve the good state of the means of cure as well as to add new ones to those already existing. The inhabitants of Nauheim too are bent upon meeting the wishes of the strangers coming here, a good many improvements are made, a good many new houses built every year so that for the future no scarcity neither of baths nor of lodgings is to be feared.

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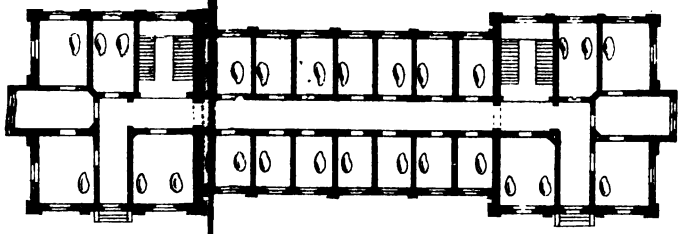

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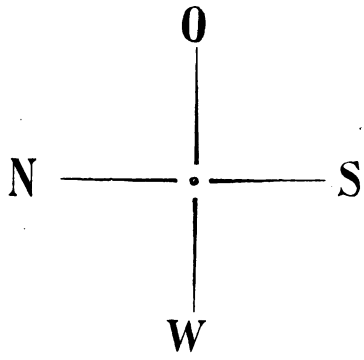

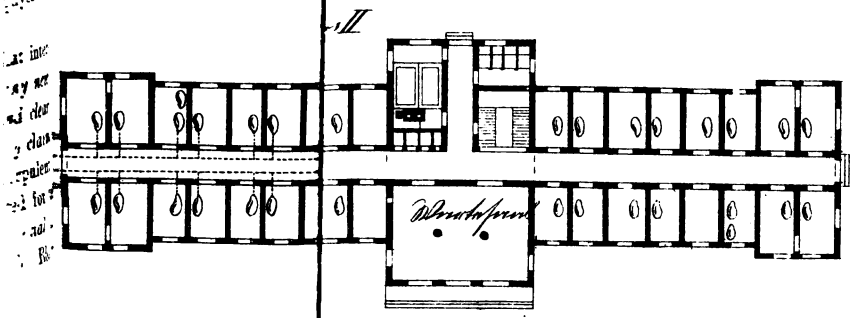

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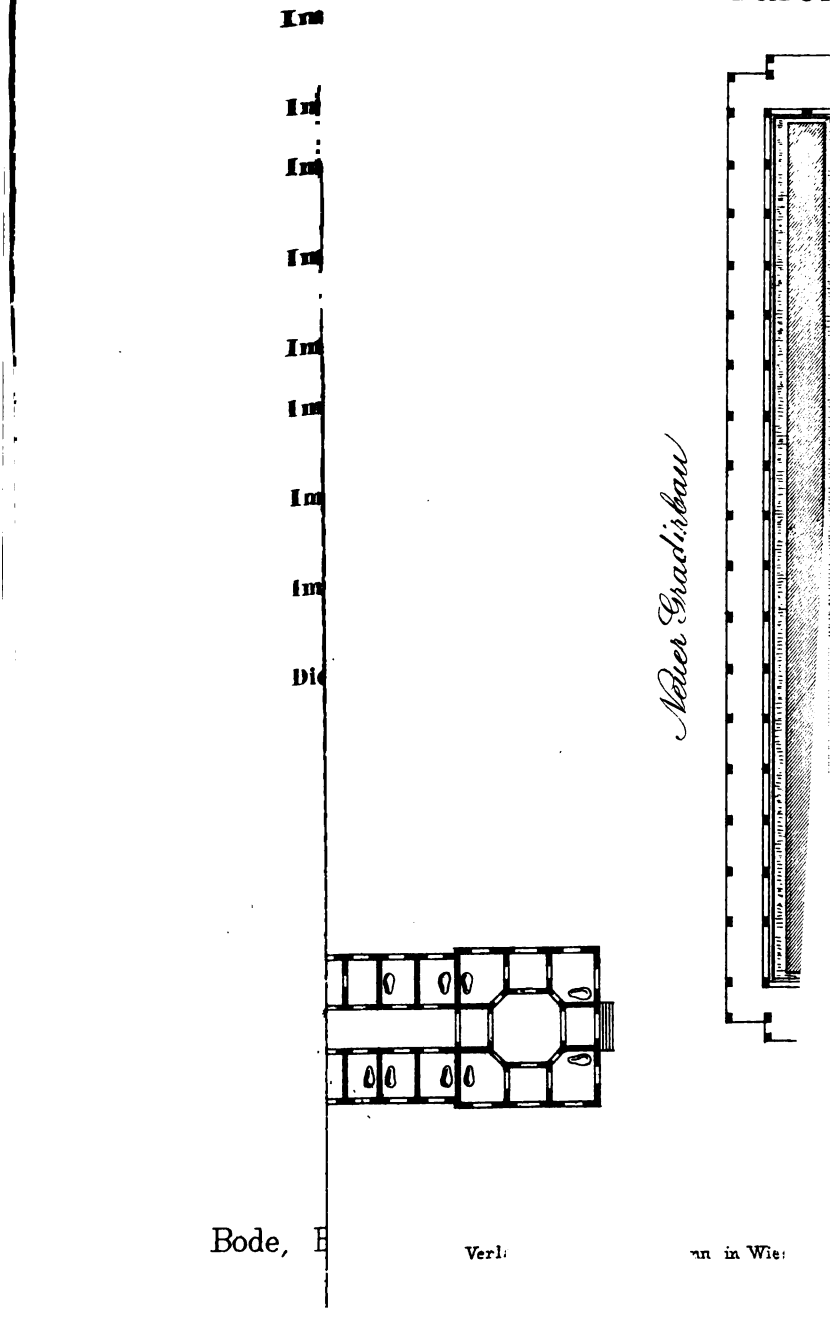
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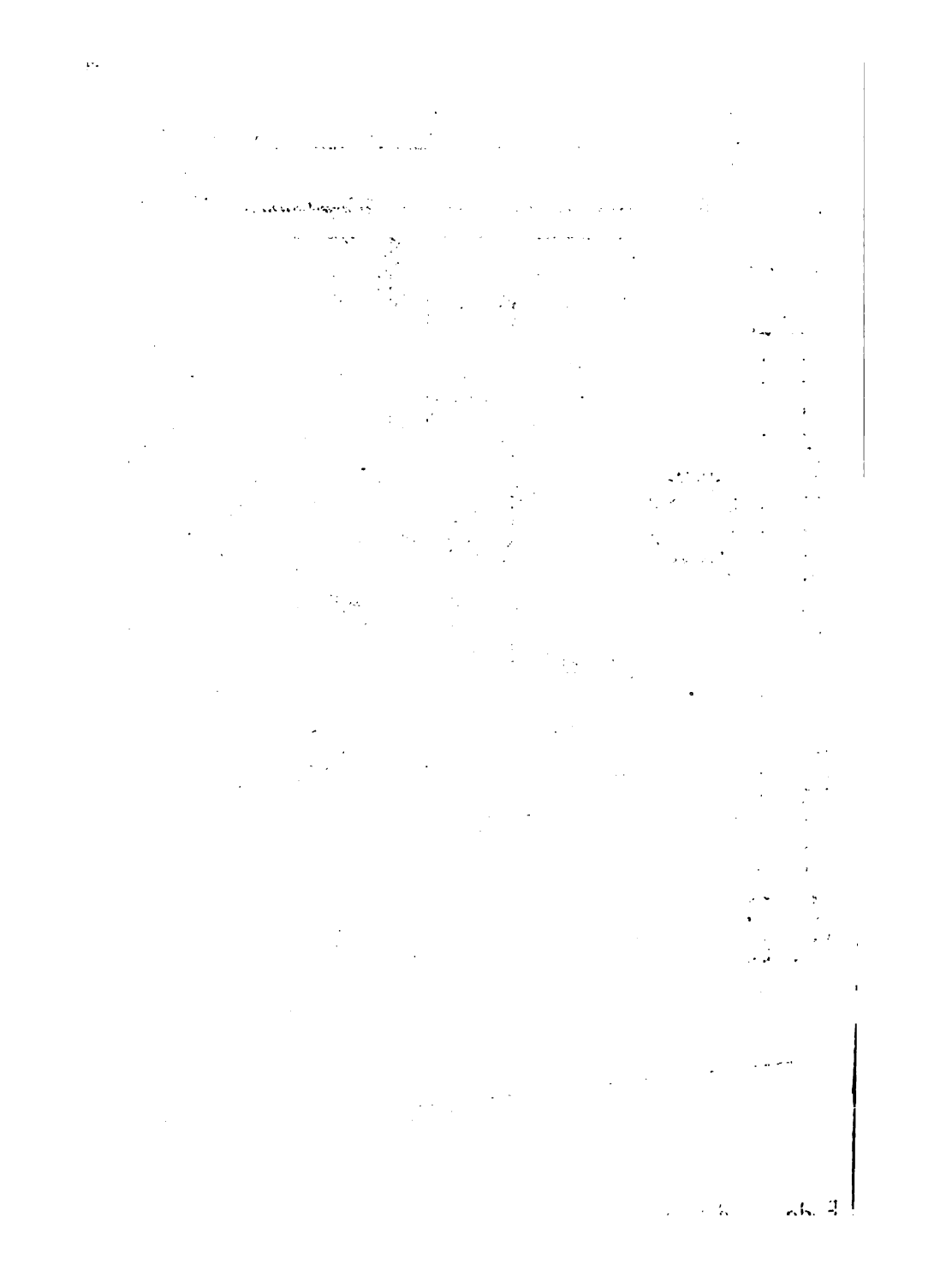

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